VOLUME LIV NUMBER TWO

THE NATIONAL GEOGRAPHIC MAGAZINE

AUGUST, 1928

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TO carry out the purposes for which it was founded forty years ago the National Geographic Society publishes this Magazine. All receipts are invested in the Magazine itself or expended directly to promote geographic knowledge.

ARTICLES and photographs are desired. For material which the Magazine can use, generous remuneration is made. Contributions should be accompanied by an addressed return envelope and postage.

IMMEDIATELY after the terrific eruption of the world's largest crater, Mt. Katmai, in Alaska, a National Geographic Society expedition was sent to make observations of this remarkable phenomenon. Four expeditions have followed and the extraordinary scientific data resulting given to the world. In this vicinity an eighth wonder of the world was discovered and explored—"The Valley of Ten Thousand Smokes," a vast area of steaming, spouting fissures. As a result of The Society's discoveries this area has been created a National Monument by proclamation of the President of the United States.

AT an expense of over $50,000 The Society sent a notable series of expeditions into Peru to investigate the traces of the Inca race. Their discoveries form a large share of our knowledge of a civilization waning when Pizarro first set foot in Peru.

THE Society also had the honor of subscribing a substantial sum to the expedition of Admiral Peary, who discovered the North Pole.

NOT long ago The Society granted $25,000, and in addition $75,000 was given by individual members to the Government when the congressional appropriation for the purpose was insufficient, and the finest of the giant sequoia trees of California were thereby saved for the American people.

THE Society is conducting extensive explorations and excavations in northwestern New Mexico, which was one of the most densely populated areas in North America before Columbus came, a region where prehistoric peoples lived in vast communal dwellings and whose customs, ceremonies, and name have been engulfed in an oblivion.

TO further the important study of solar radiation in relation to long-range weather forecastings, The Society has appropriated $60,000 to enable the Smithsonian Institution to establish a station for four years on Mt. Brukkaros, in Southwest Africa.

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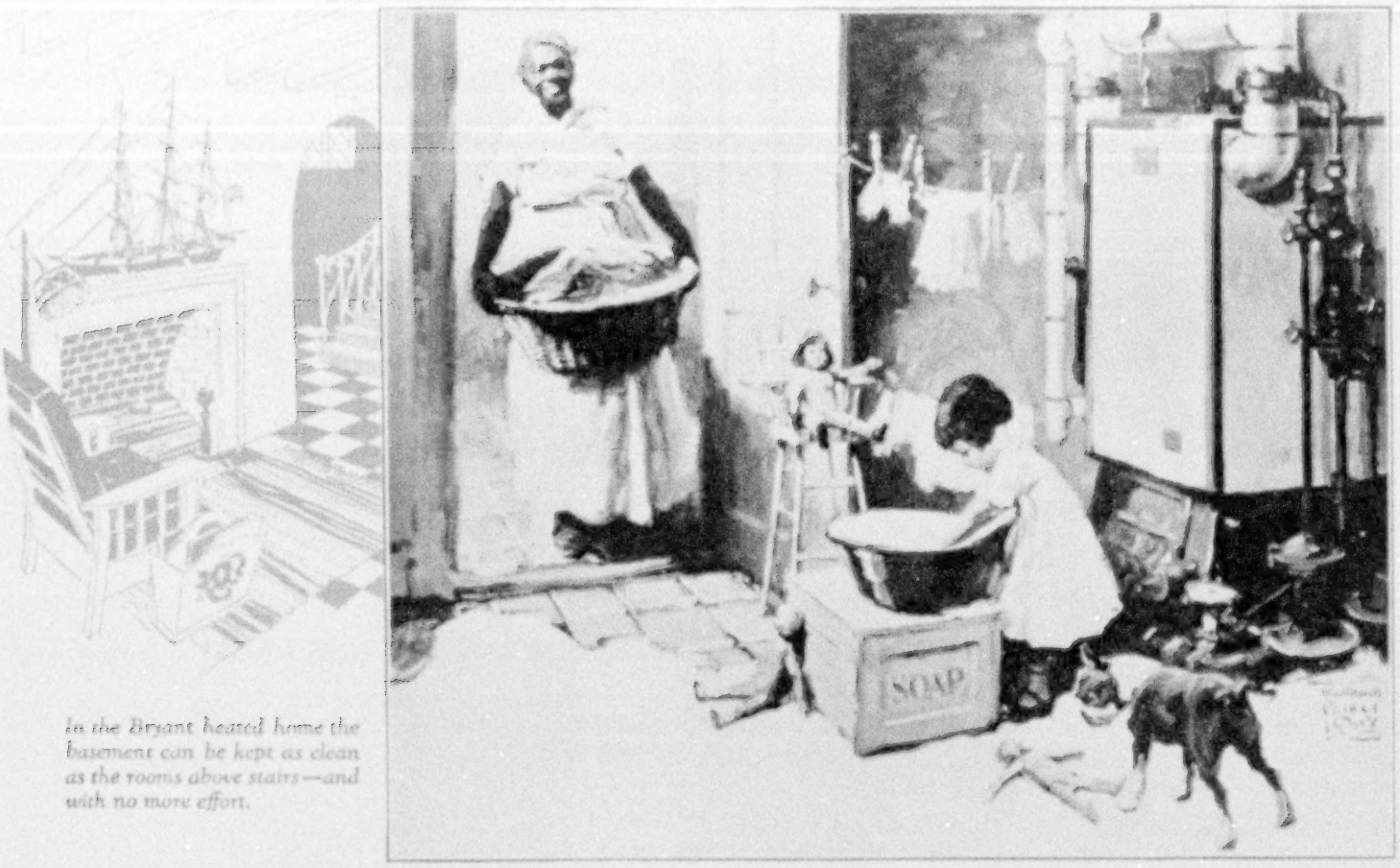

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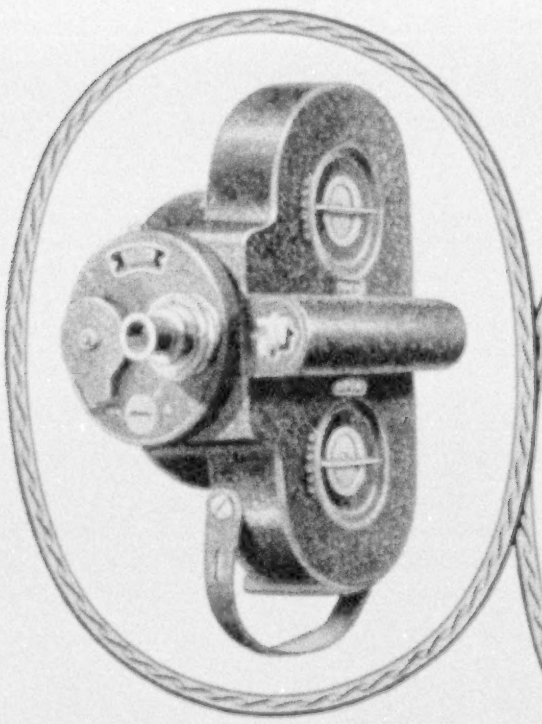

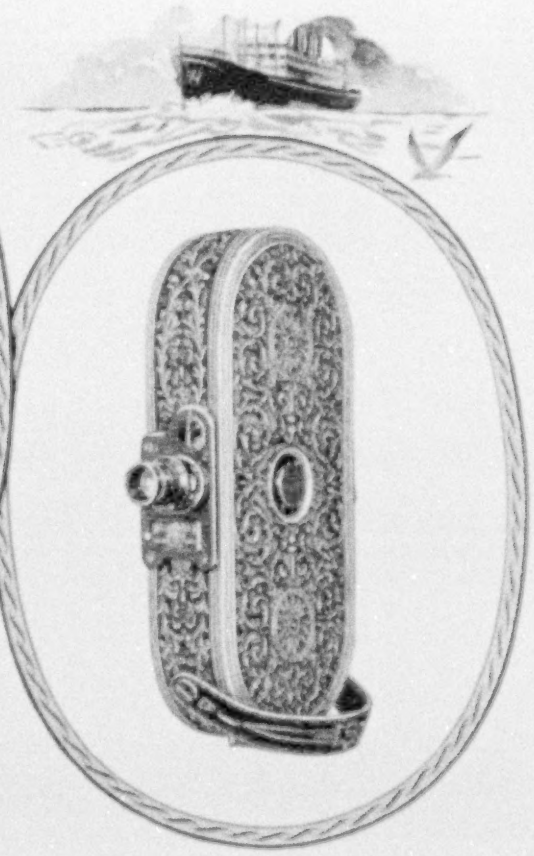

WITH either of the two beautiful Bell & Howell Filmo cameras shown here anyone, even an eight-year-old child, can take sharp, brilliant motion pictures on the very first try. Simply look through the spy-glass viewfinder, press the button and "what you see, you get"—in living *action*. Bring your travels home, exactly as you see them.

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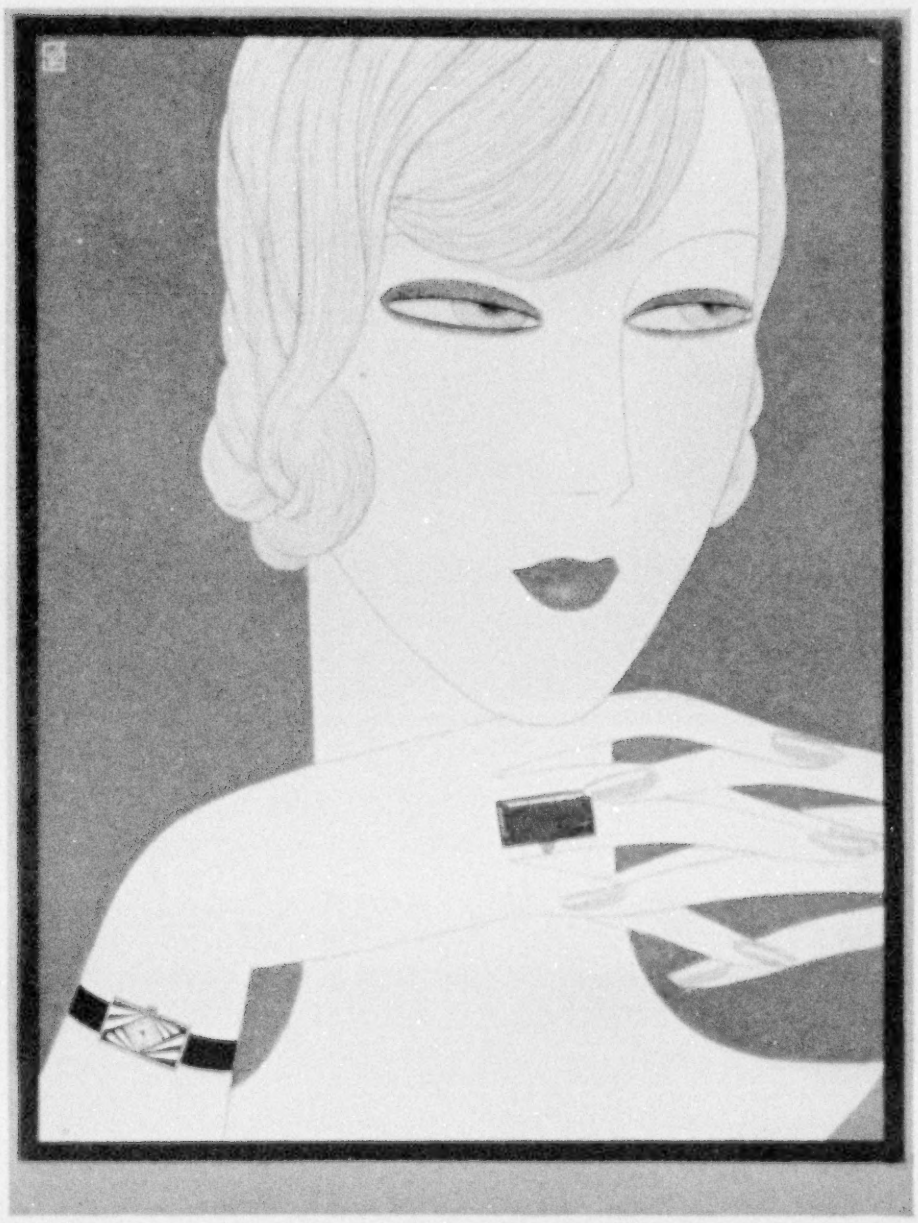

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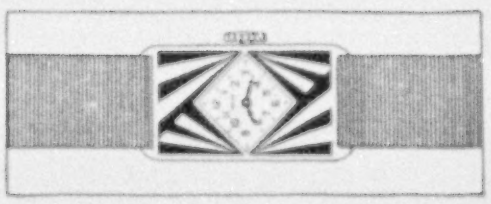

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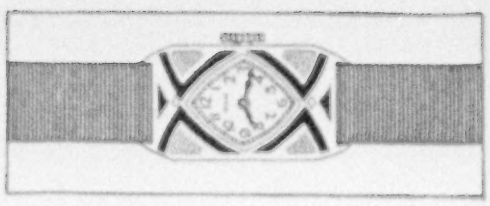

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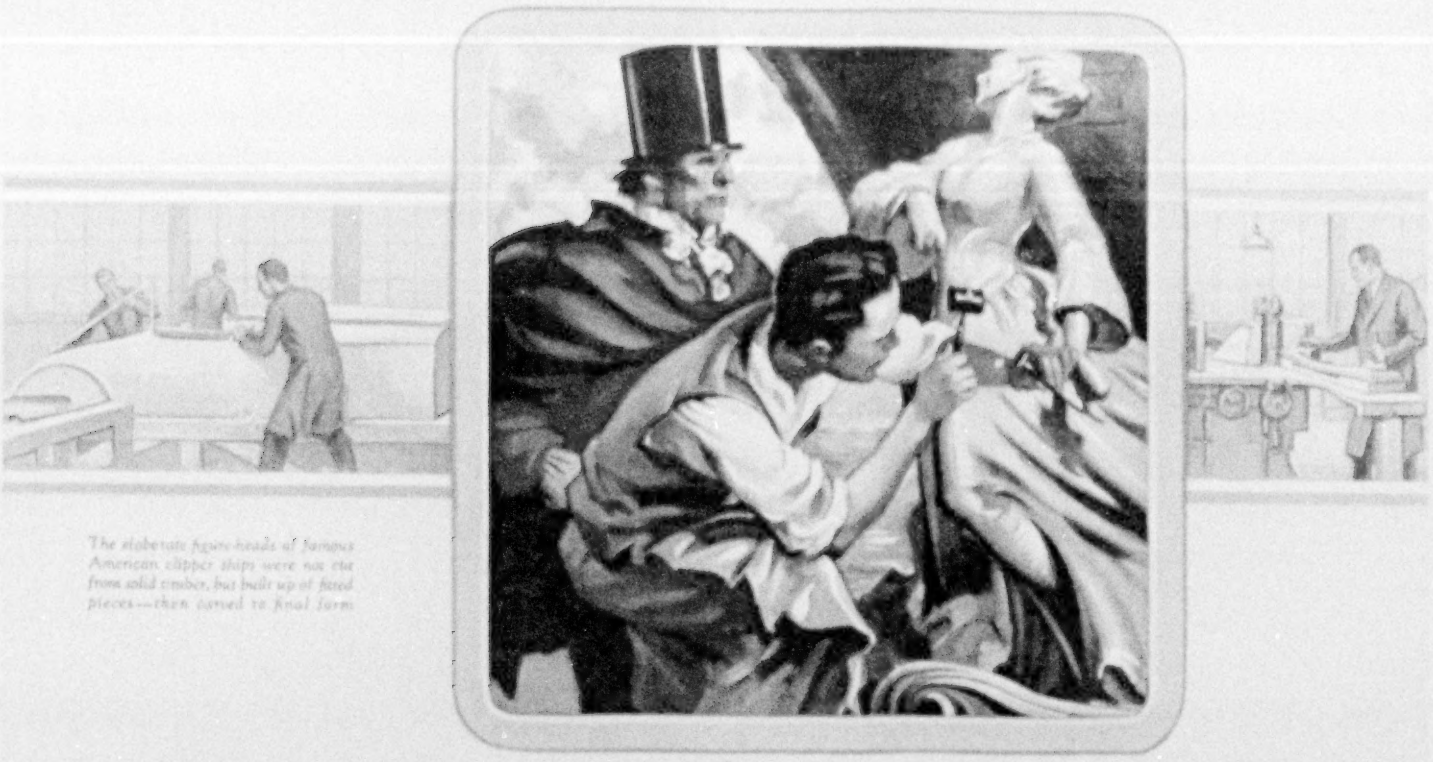

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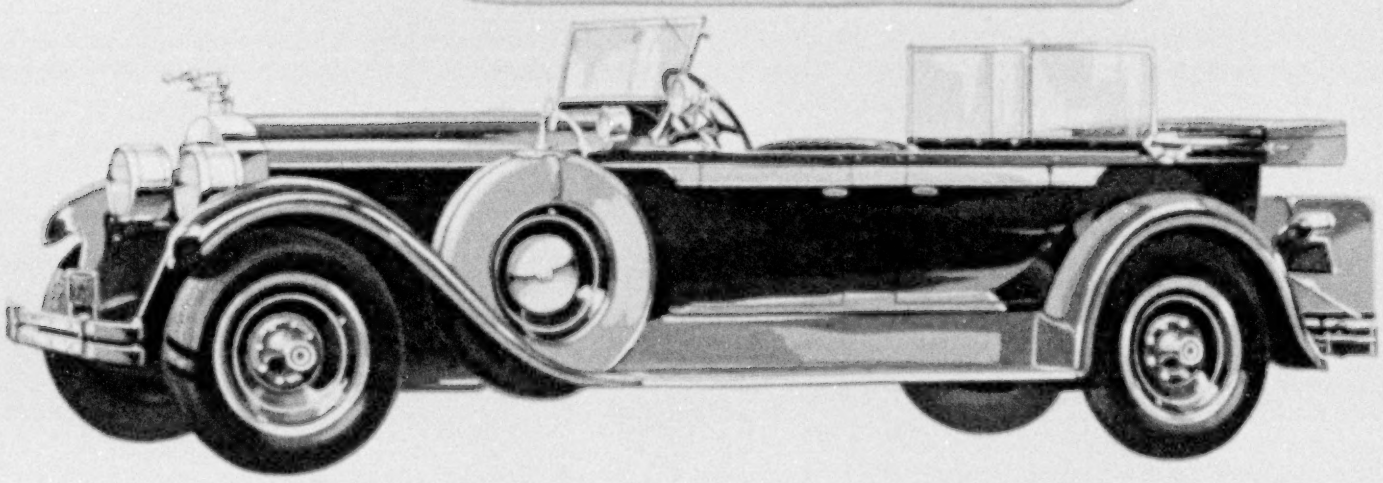

PACKARD'S characteristic lines have set the standard for an entire school of automobile design.

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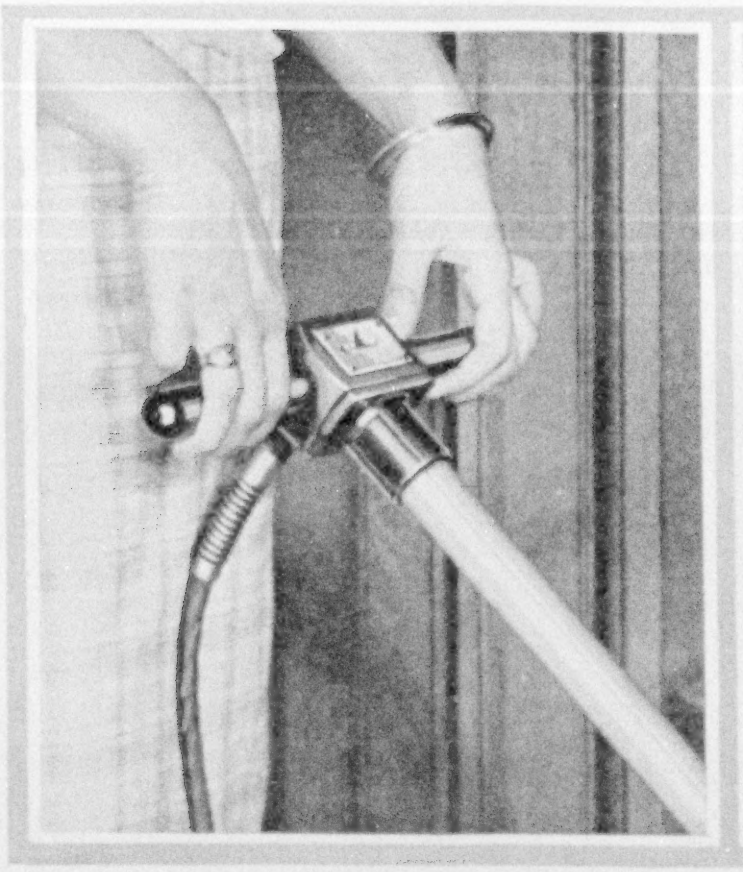

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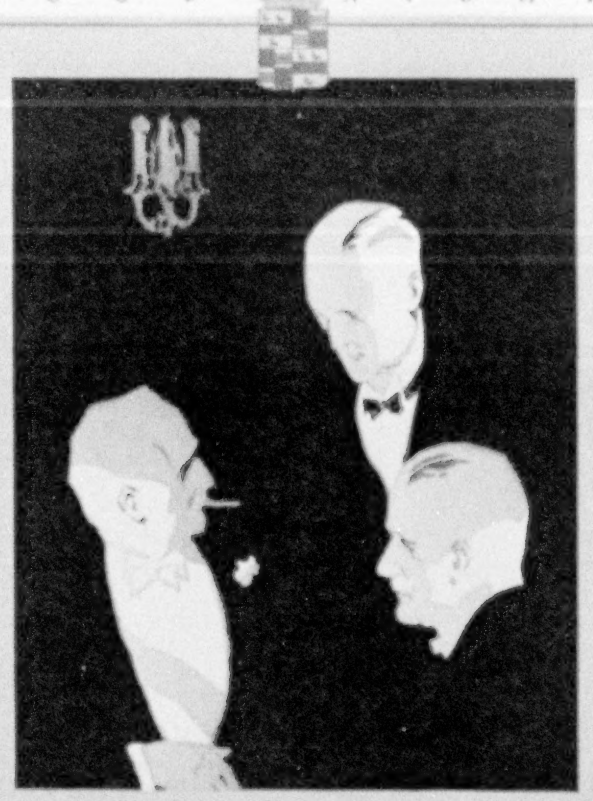

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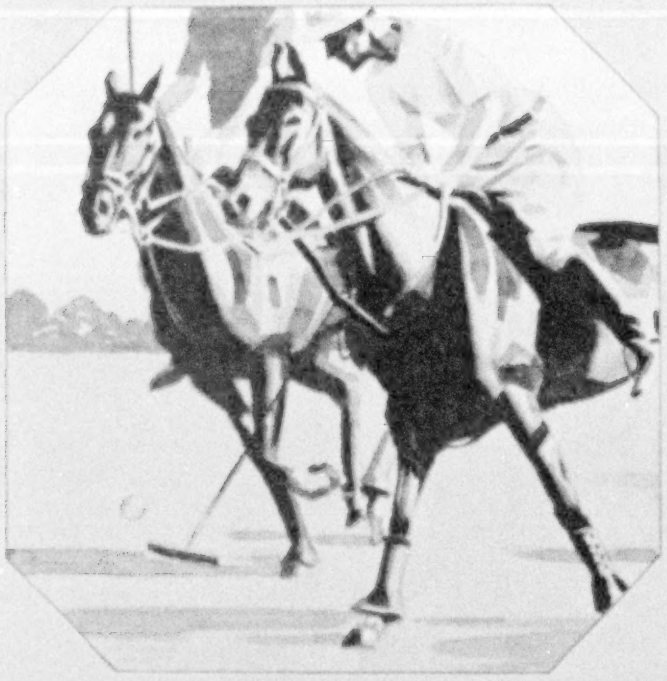

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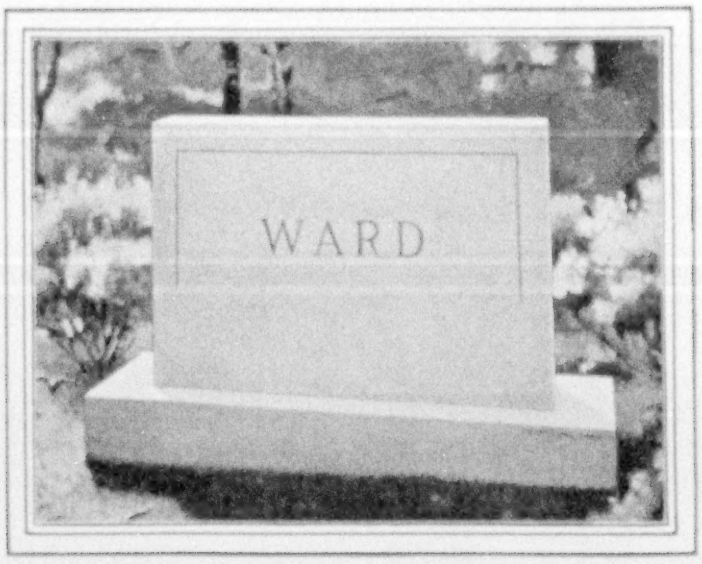

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One of the most important considerations in selecting a material for memorial use is the character of its texture. If it is uneven, now hard, now soft, it cannot be tooled except in the roughest manner, and delicate carving is out of the question. If it is knotty, or if discolorations appear, this will ruin the most beautifully proportioned design, whether the surfaces are left plain or carved.

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Miss Maryland Lee, when a tiny girl twenty years ago, began keeping her teeth clean with Colgate's. The large picture above shows Miss Lee's flashing teeth today.

AND now the clear, white teeth that lend her face its radiance are the envy of her friends.

"After all, I have done just what anyone else can do," Miss Lee tells us. "Every six months I have gone to my dentist for examination, and I have made it a rule of my life to brush my teeth vigorously twice each day with Colgate's—the dental cream that cleanses."

CLEAN

Years ago we set out to make the best dentifrice possible. We interviewed leading dental authorities. They told us that the one thing a dentifrice should do is to clean teeth. We then produced Ribbon Dental Cream—designing it to do that one thing superlatively well. It is not medicated, because all experiments in the meantime have sustained the original principle that cleansing is the only thing a dentifrice can do.

In this country, and in foreign countries the world over, you will find thousands and thousands of men and women like Miss Lee. Because they began using Colgate's ten, fifteen, even twenty years ago, their teeth are exceptionally sound and beautiful today.

The men and women fortunate enough to secure these results did nothing that you cannot easily do yourself. They visited their dentists for periodic inspections. And they used Colgate's.

Also, wouldn't it be an immense satisfaction to know that the dentifrice you were using was the one which dentists recommend most frequently?

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Please send me a Free sample of Ribbon Dental Cream.

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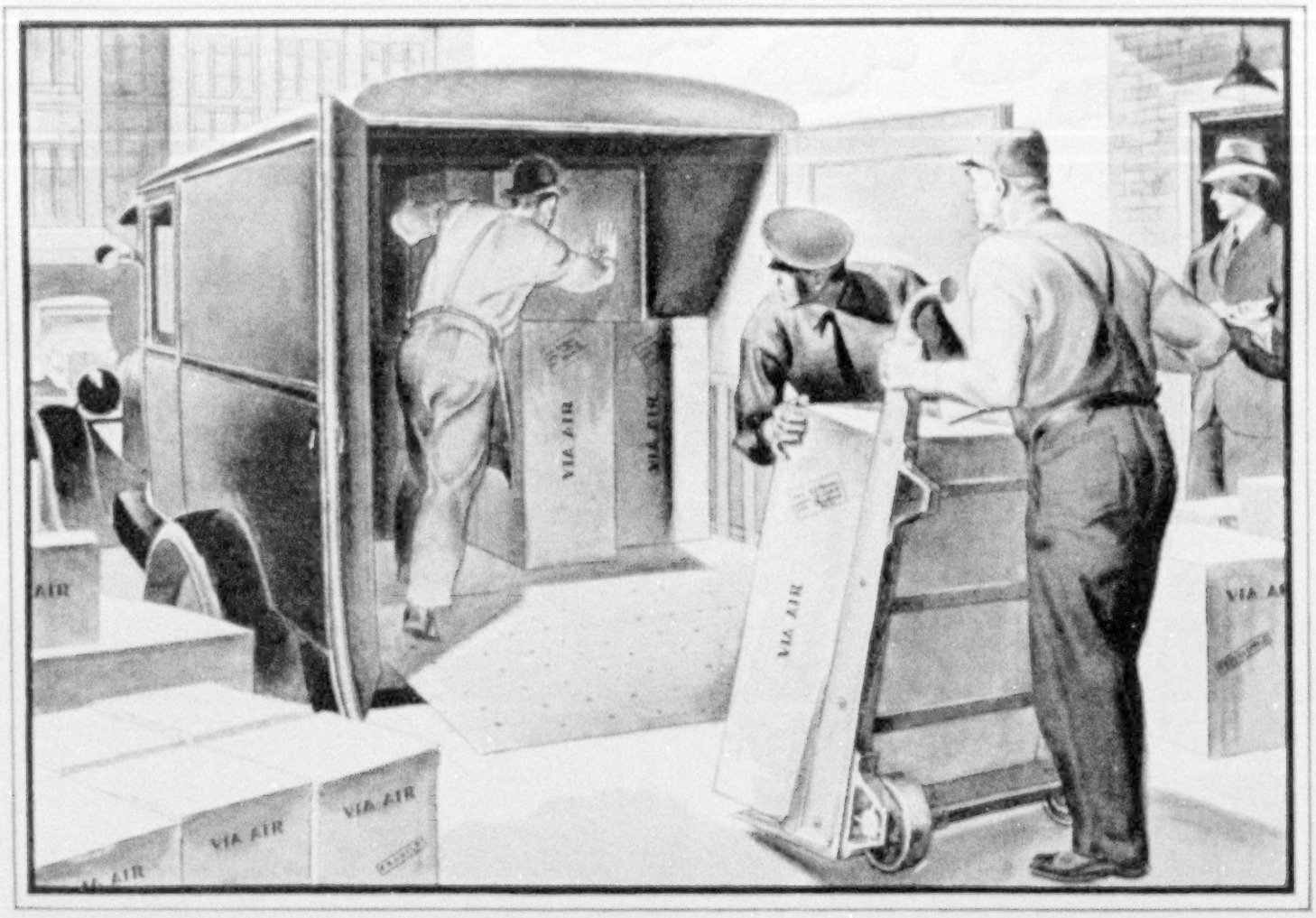
Address.....



VIA AIR!

WHEN a shipping clerk tosses a new stencil to his assistant and says casually, "Mark that one for the Air!" . . .

When the General Sales Manager frenziedly phones the routing clerk and asks how he can get samples to Milwaukee by the next afternoon, and the routing clerk says calmly, "That's all right, sir; we'll put 'em in the Air!" . . .

When the Chief Engineer turns apoplectic at a telegram from Dallas saying the power plant must shut down until a small part can be sent from the factory, and his secretary promptly suggests, "Why don't we send one tonight by Air Mail?" . . .

Then you will know that Aviation is an accepted tool of industry! *But that time has already come! For these humble portents are every-day occurrences in the routine of successful business!*

Since speed is the determining factor in competition for nation-wide markets, all great industries, all great commercial houses, are looking to the airplane for swifter transport of men and material.

The sky-ways are well-defined routes in active and continuous use. Only the fact that airports are stationed well beyond the boundaries of most cities keeps the average business man from actually seeing what is being done with commercial planes.

On the line that operates between New York - Chicago - Dallas there is a

plane speeding on its way with important commercial loads every hour of the year. The Air Mail is giving service to a trade area of 62,500,000 people every 24 hours. Over a period of three years, flying regularly from Detroit to Chicago, Cleveland and Buffalo, Ford planes have maintained an operating efficiency of 95 per cent—a record not exceeded by the railroads!

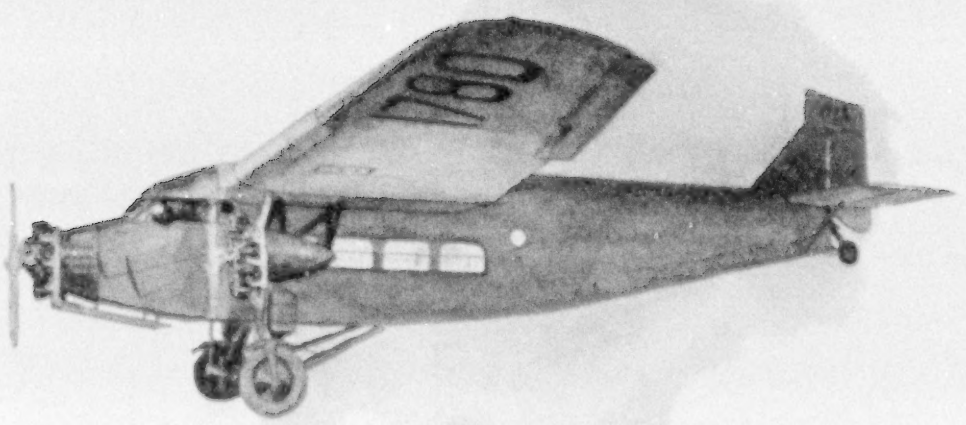
Figured on a time basis, the transcontinental airlines have already reduced the railroad map of the United States to the dimensions of a region the size of Texas!

How can this fact be applied practically in business?

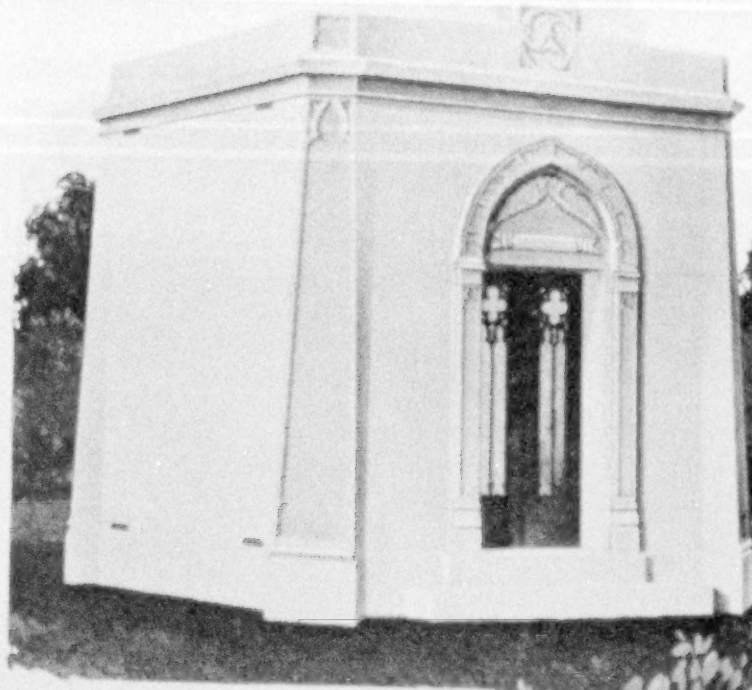
A Milwaukee manufacturer recently sold a cargo of locks in the New York market. By shipping *via air,* a thousand miles away, he put his locks down in New York as fast as his competitors could have delivered them from New England. . . . Shippers of oil from California to the Atlantic Coast save thousands of dollars in interest by forwarding Bills of Lading *via air*. . . . In March last a consignment of flowers was flown to New York, so that they might arrive with the bloom of California fresh upon them. . . . Bankers are regularly saving anywhere between $125 and $5000 monthly on distant exchanges by sending their documents *via air*. . . . And the weight of freight and mail carried over the airlines of America already *totals millions of pounds!*

The time has passed for whimsical speculation! The time has passed for the meaningless thrills of spectacular flying! The tireless wings of commercial planes are as definitely at your service as the wheels of commercial trucks. *For more than a million miles the Ford all-metal, tri-motored planes have already flown, carrying freight, mail and passengers!*

FORD MOTOR COMPANY

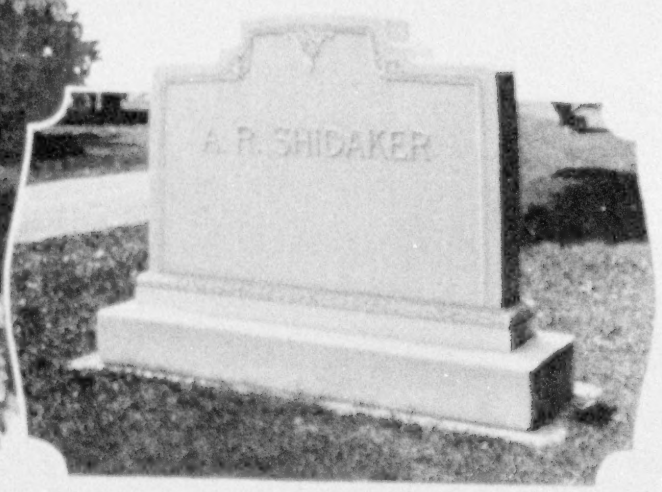


EACH memorial should be a separate, distinct artistic creation—the work of a trained mind and hand, carrying beauty unto future generations. With our service you need not accept a common, stock design. You may have a copyrighted design, executed in one of our granites, fully guaranteed as chemically pure and to withstand indefinitely the action of the elements.



Gothic adaptation predominates in this substantial mausoleum. You will find many more examples in our book, "Modern Memorial Art." Write for your copy.

A most pleasing contour, avoiding the sameness of so many memorials.



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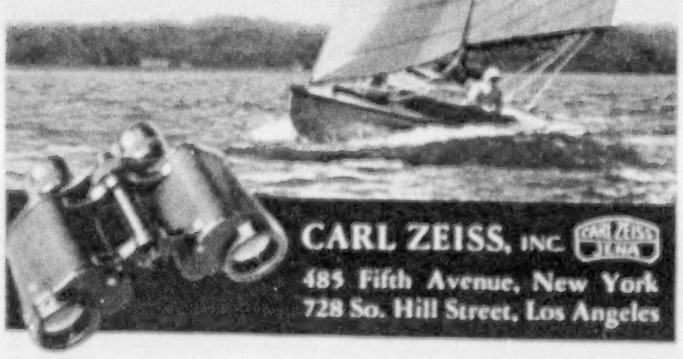

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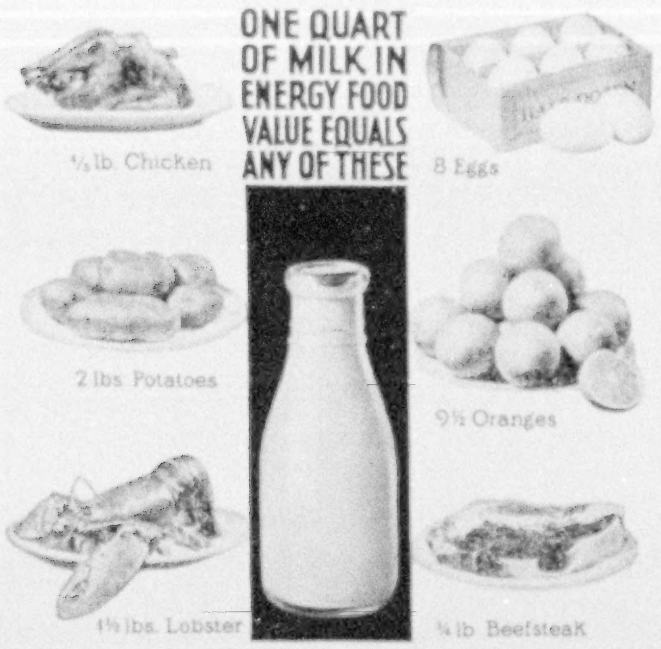

Each of these foods has its own value. The comparison is only for "energy value"—the property which gives the body strength and power to carry on its activities.

FROM the moment baby's eyes open upon a strange world his demand is for food—food that will build a sturdy body. Nature provides milk for his needs. In milk are found in right proportion all the many kinds of food required in the business of body-building. Throughout babyhood and youth the elements contained in milk are essential to sound growth.

Milk contains minerals from which the bones and teeth are made, elements which produce strong muscles—as well as vitamins to assist growth and to ward off disease.

A quart of milk a day, in some form, should be the rule for every growing child. A few children have a real or imagined aversion to milk. But the doctor may find that they can take it and enjoy it if served as cocoa or in soups, sauces, custards, puddings, or frozen desserts.

Encourage your boys and girls to appreciate milk. Make them understand that for most people it is the finest all-around food in the world. Tell them what it will do for their bodies. Children love games. Teach them the game of body-building. Protein "bricks" for strong muscles; lime "bricks" for bones and teeth; milk sugar "bricks" and fat "bricks" for energy and warmth.

Not only is milk a builder—it is a repairer, as well. That is why it is important that adults also should have a regular supply—not so much as children—but a glass or two a day or the equivalent amount served with other foods. Milk is a great help to men and women who want to keep strong, vigorous and youthful. But remember that milk has so much food value that when added to the diet a smaller quantity of other foods may be sufficient.

To take milk regularly is the surest and easiest way of making certain that you give your body the variety of food materials it needs to keep you in good physical condition.

Give milk to the children and—take it yourself.

The Metropolitan Life Insurance Company wishes to emphasize the importance of getting clean milk and keeping it clean after it reaches the home. Much of the difficulty in bringing babies safely through their second summer comes from the dangers which lie in impure milk or milk improperly cared for—milk left uncovered or without sufficient ice-protection.

Find out whether or not the milk you buy comes from a dairy where every scientific precaution has been used to keep the milk free from contamination—from the time of milking to its delivery.

Many of the great dairies, realizing the difficulties of safe-guarding every bottle of milk during the hours in transit, take no chances and pasteurize it. Many cities and towns demand that practically all milk must be pasteurized. In some cities special certificates of quality are issued upon convincing evidence of clean and safe handling and the testing of cattle for tuberculosis. Dairies which have such recognition are glad to show copies of dairy reports upon which their special certificates are issued.

If your milk supply is not pasteurized or certified, it is advisable that you pasteurize your milk at home. Complete and simple directions together with other valuable information will be found in our booklet, 88-N, "All About Milk". It will be mailed free upon request to the Booklet Department, Metropolitan Life Insurance Company, 1 Madison Avenue, New York City.

HALEY FISKE, *President.*

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NATURE AND MAN IN ETHIOPIA*

By Wilfred H. Osgood, Ph. D.

Leader of the Field Museum-Chicago Daily News Abyssinian Expedition of 1926-1927

With Photographs by the Author and Alfred M. Bailey, Member of the Expedition

AFRICA, once known as the Dark Continent, still has a few dark corners, but most of them are relatively small and, with one notable exception, no large area remains which is not under European influence. This is the ancient independent Empire of Ethiopia, which sits aloof on its elevated plateau, unconquered, little known, and almost unsung. Its autonomous position, however, is not for lack of interest, since it is larger than the Republic of France, it has a delightful and healthful climate, and its economic resources have large possibilities. It is rather because it has natural strategic advantages of location and because it is inhabited by a wonderfully patriotic and warlike people, who have defended it against all comers.

If we are not too particular in our analogies, Ethiopia might be called the Tibet of Africa. It has no Dalai Lama and no forbidden city of Lhasa, with its monasteries, but it does have a numerous religious people, ancient and isolated, living in a mountain stronghold on the top of a continent.

It is not now exactly a closed territory in the way that Tibet is, but it has been practically closed for long periods in the past and foreign travel within its borders has always been very limited.† In order to enter it, one must ask permission of the Ethiopians (Abyssinians) themselves, rather than of some European power. With Afghanistan and Siam, it is one of the three absolute monarchies left in the world.

PEOPLED AT THE DAWN OF HISTORY

The beginnings of Ethiopia go back to times of myth and legend. Unlike Egypt, with which some of its early history was doubtless connected, it has left only scanty and very imperfect records. That it was peopled from the north, perhaps from ancient Judea, with additions from Egypt and Arabia, is evident. The people, therefore, are Hamitic and Semitic in origin.

As to when and how they arrived, there is much uncertainty. Apparently we may go back to 1000 B. C. with some degree of safety; but even here we have no solid ground of fact and, since it is a matter of speculation and inference anyway, there are those who are willing to believe in origins as remote as 5000 B. C. Among these are the Ethiopians themselves, whose pride of ancestry may perhaps be excused for being allowed to outweigh the accuracy of their historical chronicles.

One of their most cherished traditions

* While the author prefers the well-known name Abyssinia and found that the natives customarily referred to themselves as Abyssinians, the United States Government has adopted the name Ethiopia, in accordance with official Ethiopian sanction. Ancient Ethiopia of Greek and Roman geographers, the Biblical Cush, included various parts of North Africa, and applied especially to the District of Meroë, which is now a part of the Anglo-Egyptian Sudan.

† See, also, "A Caravan Journey Through Abyssinia," by Harry V. Harlan, in the National Geographic Magazine for June, 1925.

RAS TAFFARI AND HIS WIFE, WAIZERU MENEN, ON THE PORTICO OF THE PRINCE REGENT'S PALACE

The dog was their constant companion and both showed much affection for it.

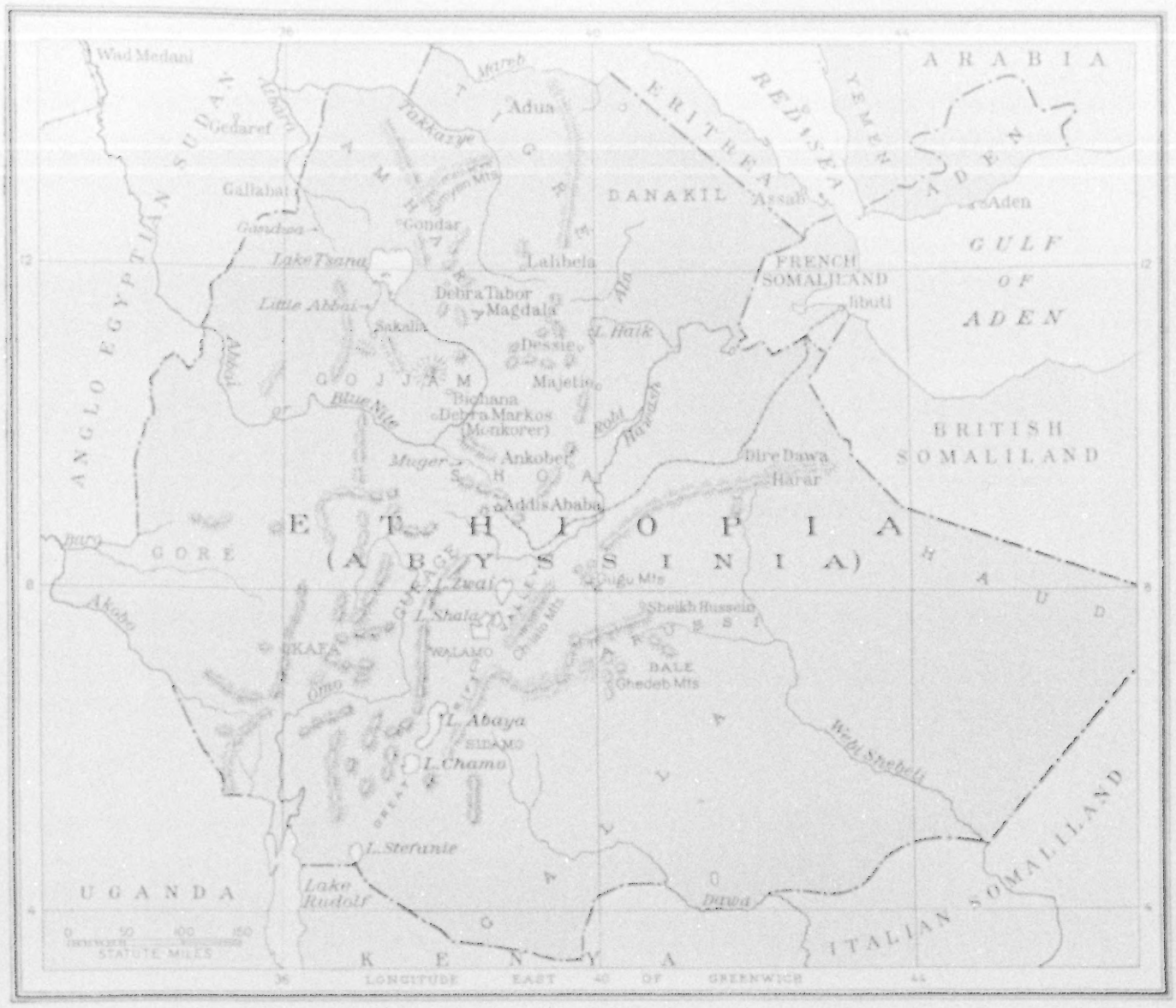
is that of the descent of their line of rulers from the offspring of Solomon and the mysterious queen Makeda, or, as now designated, the Queen of Sheba, who is supposed to have visited King Solomon at Jerusalem about 1000 B. C. From this time on for some three thousand years their dynasty is believed to have continued, and it is certain that, in spite of many civil, religious, tribal, and foreign conflicts, they have maintained themselves as a free and independent people.

Their territory has expanded or contracted from time to time, but its essential integrity has persisted. Their civil and social customs, language, and their outlook upon the rest of the world also have remained largely unchanged; so to-day they stand as anachronisms in a world which is moving at bewildering speed.

Although surrounded by Negro tribes and having some admixture of Negro blood brought in through centuries of slave-holding, the Ethiopian is by no means a Negro.

He is dark-skinned, with hair usually kinky and lips frequently thick, but he has a good high-bridged nose, well-set eyes, and a firm chin (see illustrations, pages 130 and 131). To this he adds a proud and dignified bearing and a warlike, patriotic spirit, which mark him in an outstanding manner.

His principal language is Amharic, an



Drawn by James M. Darley

A MAP OF ETHIOPIA

In an area of 350,000 square miles resides an estimated population of 10,000,000, of whom about one-third are true Ethiopians. The author led an expedition from Addis Ababa, the capital, to the southern territory inhabited by the Gallas, then north through Gojjam to Gondar and the Lake Tsana region, covering nearly 2,000 miles of territory and making nearly 200 camps.

ancient Semitic tongue, but many languages and dialects are spoken. There is no literature in Amharic and only priests can read and write in Geez, also of Semitic origin, but a dead language no longer spoken.

There are various tribes, but the dominant one, representing the original stock, mainly occupies the central and northern part of the country.

FEUDALISM, SLAVERY, AND CHRISTIANITY

The modern history of Ethiopia may be said to begin with the famous emperor and national hero, Menelik II, who ruled from 1889 to 1913. He unified various warring groups, subdued outlying savage tribes, added much territory, and encouraged the inception of a railway from the coast. In all this he laid the foundation for the introduction of foreign ideas, most of which were ineffective during his lifetime, but which are now beginning to have important results.

The government is an old-fashioned feudalism, such as flourished in Europe in the Middle Ages. Theoretically, the hereditary ruler is all-powerful, with the life or death of every man in his hands. All are subject to his call to arms and, through a system of provincial governors, overlords, and petty chiefs, to taxation and other forms of service.

Practically, the system is subject to some variation; for, in a country with poor communication and many physical barriers, might can make right here as elsewhere, and it is sometimes possible for a man to rise to comparative power through his own effort. Under the feudal

WHEN ETHIOPIA CELEBRATES A HISTORIC VICTORY

Thousands of Ras Taffari's followers, in immaculate chammas and with all their paraphernalia of war, gather upon a great flat outside the capital city of Addis Ababa awaiting the arrival of the Ras, who goes to church to offer thanks. The empress arrives in a closely curtained motor car, but Ras Taffari rides upon a gaily caparisoned mule. It is a motley crowd on the field, with lesser chieftains coming from afar, each one upon a mule and accompanied on foot by his bodyguard with guns and swords—sometimes one hundred footmen; then there is the poor class of natives in less cleanly clothes, the slaves and the beggars. The "halt and the blind"—lepers and mutilated people—are usually gathered in one band, where they beg for alms.

MUSEUM

THE STREETS OF ADDIS ABABA ARE A STRANGE CONTRADICTION OF OLD AND NEW

Camels and donkeys share the right of way with American motor cars in this paradoxical city. The present regent has done much to modernize his capital, but the wheels of progress move slowly and there are still many relics of an age long since outgrown by most of the countries of the world.

THE MARKET PLACE OF ADDIS ABABA

The focal point of the life of the capital city is the huge rectangular market place, often so jammed with people and animals that it is hard to force a passage through. The ladies in the foreground have achieved their elaborate coiffures with the aid of liberal applications of butter to keep their locks in place (see, also, page 149).

system, as in days of old, the vast majority of the people are vassals in one degree or another.

Every little village has its chief, or *shum*, and around him are his retainers. When he travels or appears in public they tag at his heels, and when he is at home they lie about his courtyard like so many hunting dogs, waiting to be called. If he is a big chief, they may number hundreds or, on special occasions, thousands; if he is of minor importance, they may be only two or three; but everyone who can muster as much as one small boy to act as his attendant will take great pains to do so.

In addition to serfdom, slavery has existed for hundreds of years, and, although the present government is making a sincere effort to mitigate and diminish it, there is little hope that it can be entirely abolished at once.

Long before our European ancestors had heard of Jesus of Nazareth, Ethiopians were devout Christians, and Christians they have remained to this day. They are Christians of the Coptic, or Monophysite, branch, which originated in Egypt and is supposed to have reached Ethiopia early in the fourth century. The priesthood is very numerous and very powerful and numbers nearly one-fourth of the male population.

MANY TYPES OF NATIVES ARE SEEN AT WEEKLY RURAL MARKETS

By reversing the camera and shooting backward, the author and Mr. Bailey often took the photograph desired, while some scowling individual turned his back. The caravan men were adepts at this game, and often posed and carried on a conversation with the photographic victim while the picture was made backward.

Until recently Ethiopia has been difficult of access, both physically and politically. Foreigners have not always been welcome, and even some of those who were officially well received have been killed while traveling in outlying parts. During the World War, however, a railroad was completed from Jibuti, in French Somaliland, to Addis Ababa, which is in the heart of the country (see map, page 123).

GOOD FIELD FOR ZOÖLOGICAL EXPLORATION

Ethiopia is a rich field for zoölogical research. The Field Museum's recent expedition to that country was carried out with the substantial aid and coöperation of the *Chicago Daily News*. The hospitable reception accorded by the Ethiopians enabled the expedition to cover a large part of the country.

Our party included Suydam Cutting, sportsman and amateur motion-picture photographer; James E. Baum, Jr., special writer; Alfred M. Bailey, naturalist and photographer; and Louis Agassiz Fuertes, ornithologist and painter, well known to readers of the NATIONAL GEOGRAPHIC MAGAZINE through many beautiful paintings of birds and mammals which he has contributed to its pages. The accidental death of Mr. Fuertes, since our return, has been widely noted. He was a very talented and delightful man, and he is greatly mourned as artist, naturalist, teacher, and friend.

AN UPPER-CLASS WOMAN RIDES TO TOWN

Being Christians and monogamists, the Ethiopians have considerable respect for women. A woman of the better class may ride forth accompanied by retainers of her household much as a man does, but in public her face is thickly veiled below the eyes.

THE FERTILITY OF ETHIOPIA'S SOIL IS PHENOMENAL

The varying levels of the country permit almost everything found in temperate and tropical climes to grow, but vegetables and fruit are seldom seen. Wheat, barley, and the indigenous *durra* and *teff*, similar to millet, are the most important cereal crops. They are harvested by the primitive methods in use two thousand years ago.

THE MAIL MUST MOVE, EVEN IN ETHIOPIA

Because most of the men who carry the letters cannot read or write, there develops in them a superstitious sort of devotion to the "paper that speaks," and they perform prodigies of endurance to bring it to its proper destination.

After much preparation and many diplomatic arrangements, we arrived in the centrally located capital, Addis Ababa, two words meaning "new flower." This is the nearest approach to a real city in the country and the only place much affected by modern influences.

It was in the first days of October, just after the close of the rainy season, that we arrived at Addis Ababa, when the smiling plant world was most attractive, the weather perfect, and promising to continue so for full seven months, during the long dry season.

Snuggled against the hills at an altitude of 8,100 feet, Addis Ababa has a beautiful situation and a fine climate, with cool, clear nights and glorious days of brilliant but not oppressive sunshine.

The main streets of the capital literally swarm with natives in their picturesque costume of white cotton cloth. They are all barefooted or, at most, wear very simple sandals, and the majority are bareheaded, although the red fez, and especially the turban of the Moslem, appear with considerable frequency.

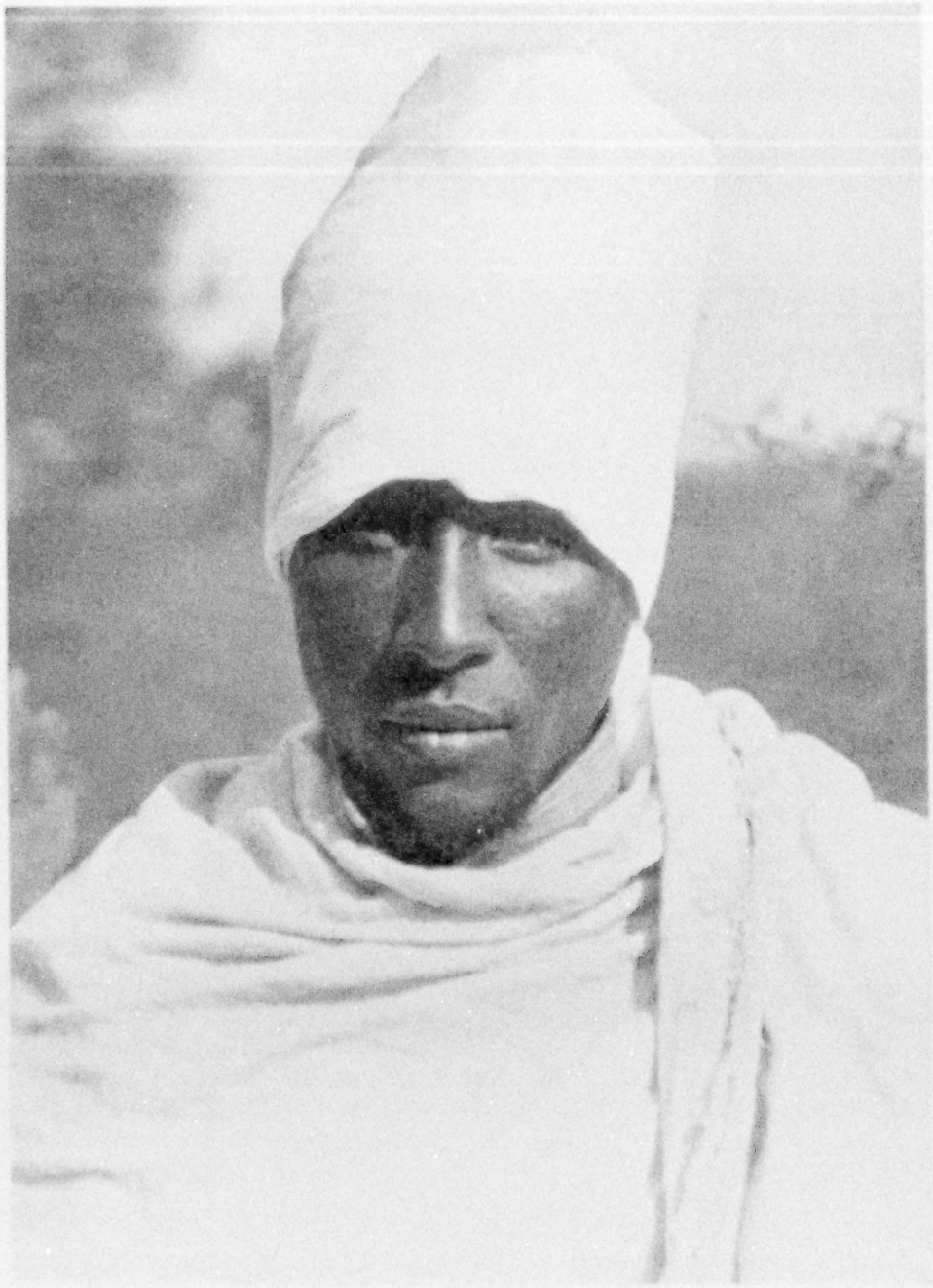
There are so many people abroad that one feels it must be a gala season of some sort, but the visitor learns that much of the coming and going may be accounted for by the fact that in a feudal country the job of being a vassal consists largely in running errands or wandering and sitting about doing nothing.

The streets in Addis Ababa are fairly wide, but very winding, and the city is spread over a large area. In the business section there are a few buildings of substantial character, and western civilization has made its usual contribution of corrugated iron, but the dwelling places are mainly in native style, with thatched conical roofs and dirt floors.

AUTOMOBILES ENLIVEN TRAFFIC OF THE CAPITAL'S STREETS

The automobile has arrived and proved its usefulness to such an extent that some 300 are now in use, and the work of grading and improving streets is actively under way. Outside the city, however, the automobile, as yet, cannot go.

Small trade is carried on by Turks,



THE ETHIOPIANS HAVE PRONOUNCED SEMITIC FEATURES

Black curly hair, a brownish black skin, rather high forehead, and scraggly beards are usual. They are a stalwart people, capable of long overland journeys on foot. They can undergo a great deal of physical punishment and are extremely stoical. On one occasion one of the boys of the author's entourage asked to have a bandage put on his toe, which was terribly bruised. The headman of the caravan grabbed him and hustled him away, saying, "You no white man." A live coal was then placed upon the toe until it was thoroughly cauterized, and the boy made scarcely a grimace of pain.

Armenians, and Hindus, who have been suffered to come in, and altogether the place presents a curious mixture of the ancient and the modern, together with certain pioneer features due to the fact that the city was founded scarcely more than 30 years ago.

Hyenas howl at night and Ford cars honk and rattle by day. Camels in long lines sway along under heavy loads; mules and donkeys, horses that range from native scrubs to the finest Arabians, cattle, sheep, goats, dogs—all kinds of domestic animals except pigs—help to fill the streets. A motor ride through this teeming life is more or less of an adventure and is partly deprived of its interest by the noise of the horn, which the driver is, perforce, obliged to keep honking practically all the time.

While the people flock through the streets all day, they are forbidden to be out at night, as there is no lighting system, and after dark the highways are left to the prowling dogs and hyenas. Even leopards have been known to enter the city at night.

The curfew does not apply strictly to foreigners, but they are enjoined to carry lights at night, and if they are wise they provide themselves with stout clubs to ward off the dogs.

All this sounds somewhat forbidding, but in reality a sojourn in Addis Ababa is both interesting and enjoyable. There are several small hotels offering satisfactory food and lodging; the foreign colony is cordial, and Ethiopians of rank also extend hospitality.

One may indulge in horseback riding, tennis, teas, and dinners, and although motoring is expensive and not yet a diversion, it contributes to freedom and rapidity of movement within the city for business and social purposes.

Americans are made to feel at home by their own countrymen connected with the American Mission and Hospital, and with

the newly established legation and consulate. The work of the mission is mainly medical and educational and it has done much to create and maintain good feeling toward America.

WELCOMED BY RAS TAFFARI, PRINCE REGENT

The titular head of the State is the Empress Zauditu, daughter of Menelik II; but practical affairs are largely in the hands of the young and progressive Ras Taffari, whose official title is "Regent of the Empire and Heir to the Throne." It was practically at his invitation that we entered his domain, and he received us with the utmost courtesy and consideration.

We found the regent a man of quiet dignity and much charm of manner, educated far beyond most of his subjects, and deeply interested in and devoted to the welfare of his country. Immediately after our arrival he granted us an interview, and a few days later invited us to a state dinner in company with various diplomats and other foreigners. At this dinner we met his wife, Waizeru Menen, quiet and unobtrusive, but a gracious hostess (see illustration, page 122).

The dinner was in French style, of well-chosen modern food, prepared by an accomplished chef, and served faultlessly by white-garbed native waiters. No detail was missing, and if there was anything about it that might be called barbaric it was only the display of a golden table service which was dazzling. Plates, serving dishes, spoons, forks, knife handles, large vases, and high, double-decked fruit dishes, all were of solid gold, the metal, perhaps, of Ethiopian origin, but the design and workmanship beautifully wrought in Europe. Among the decorations of the table was a small bowl of live goldfish, which elicited the remark that perhaps they also were solid gold.

Ras Taffari and his court in Addis Ababa are a mixture of the old and the new. Outside the capital city there is nothing modern and the customs of the

KINKY HAIR AND THICK LIPS, BUT OTHERWISE NOT NEGROID

The Ethiopians have various ways of indicating valor. If a man has killed one of the large antelopes, he wears a gold ring of a certain kind, while if his curly hair has been pulled out and trained to stand on end, as in this photograph, he has killed either a man or a lion. It is considered a little better to have killed a lion. One old Ethiopian, complaining that he had no sons, only two daughters, said, "I'd like to have had sons, so they could be like me. I like to kill men and lions."

ANYTHING UNDER ETHIOPIA'S SUN MAY BE PURCHASED IN THE ADDIS ABABA MARKET

All kinds of food, domestic animals, clothing, tools, weapons—indeed, nearly everything the country affords—is displayed for sale here. Around the market square are many small shops, kept mostly by foreigners.

people have not changed for centuries. This we were soon to discover.

We spent several weeks in the capital organizing our caravans; then plunged into the unknown in the large southern province of Arussi.

The organization of the caravan was itself something of an adventure. In the big game fields of Central Africa and in the Congo, caravans move "on safari" by man power, with porters or bearers carrying loads on their heads or their backs; in the hot lowlands surrounding the Ethiopian plateau camels are the usual means of transport, but in the highlands, which constitute the main part of the country, with the fertile grass-grown meadows, the abundance of water, the fine climate, and, above all, with the lack of such murderous insects as the tsetse fly, it is possible to use mules and horses.

Therefore we traveled by mule train, and our own mounts were especially selected riding mules. When fully outfitted we had 60 mules and 40 men—interpreters, headmen, personal servants, cooks, mule-skinners, and armed guards, or *zabanias*. These last stood watch over the camp at night and did certain police duty while on the march, but their main use was to conform to the custom of the country, which decrees that no man of importance travels without an armed following to tag behind him, ready to fight off brigands if necessary.

Although loyal to us and more than willing to fight for us at all times, these men were mostly very poor shots; so it was principally as a show of force that they were of value.

CHARACTER OF CARAVAN MEN

Three days' march southward from Addis Ababa we came to the Hawash River and were relieved to find it at a stage offering no especial difficulties for fording. Camp was made near its southern bank, in a parklike spot, where lush long grass grew under large trees scattered like the live oaks of California.

The rains were over, but Nature still sparkled; the Hawash was behind us, all the multifarious preliminaries were finished, and after the last few trying days

PRIESTS AND SLAVES

A reactionary priesthood and the institution of slavery are among the forces tending to deter the progress of this African country.

of wrangling with the men of the caravan to get them away from the city and actually under way, it was with profound satisfaction that we settled into the free, open life of camp and trail. This we found delightful beyond expectations.

PHYSICAL COWARDICE UNKNOWN

Our men were proud, suspicious, and very jealous of personal rights, but after we had eliminated a few bad characters, after we had come to know the others individually, and after we had learned to speak a few words of their language, we had no serious difficulty in managing them.

Their own petty affairs and complaints against each other never ceased to need adjudication, but in the main they proved loyal and willing to do our bidding. In the city they were unmanageable, but once on the trail a marked change was evident. They have little initiative and are burdened with custom and superstition, but under direction they work willingly and efficiently.

Among the best of them were outstanding individuals, whose tireless energy, industry, and faithfulness could scarcely be excelled—men one would choose for caravan service among any race of people in the world. Above all, they were never physical cowards. This was proved on many occasions in encounters with dangerous animals, in hazardous undertakings against natural obstacles of mountain or river, and in meeting real or fancied hostilities from natives along the way. Whatever else he is, the Ethiopian is not a physical coward.

A THREAT FROM BANDITS

In Addis Ababa we had received many warnings about robbers and bandits, *shiftas*, as they are called, and, although they did not molest us seriously, we saw plenty of evidence of their existence. In fact, it was not long before we met a band of them at close quarters. We were camped in an isolated place on the banks of a small river, at the bottom of a canyon,

WHERE THE CREDITOR TAKES NO CHANCES ON LOSING HIS MAN

When an Ethiopian debtor either cannot or will not meet his obligations, his creditor applies before a court to be "given his hand." This consists in linking the right hand of the debtor to the left hand of the man he owes, and thus they travel about together until the debt is discharged. In order to escape the humiliation of being thus publicly branded delinquent, the attached party usually manages in a short time to raise enough money to effect his release.

when thirty or forty horsemen suddenly appeared on the rim of the cliffs above us, and then rode down to the opposite bank of the river and looked us over.

They were obviously ruffians. All carried long, wicked-looking spears and were unaccompanied by women or baggage. They dismounted and remained for an hour or more, much of the time carrying on violent arguments with each other, as if undecided what to do.

Toward nightfall they left, and our men were much disturbed with the idea that they planned to return and attack us in the dark. Special guards were placed about the camp, and we ourselves slept with loaded rifles within easy reach. Nothing happened, however, and subsequent experience led us to conclude that we were never in any real danger from bandits.

These marauders prey mostly upon small, unprotected caravans, and their forays are likely to be directed against lifelong enemies of adjoining tribes rather than against foreigners, whose ability to shoot straight has their respect.

It is only a relatively short time since all Ethiopia was a mere collection of warring tribes without loyalty to any except local chiefs, and many of the old hatreds still exist. For this reason the native seldom travels alone except in his own territory. Our local guides on coming to the boundary of another tribe would stop and announce that they could go no farther. If urged to continue, they seemed greatly astonished and advised us that we were asking nothing less than suicide from them, since they would be obliged to return alone.

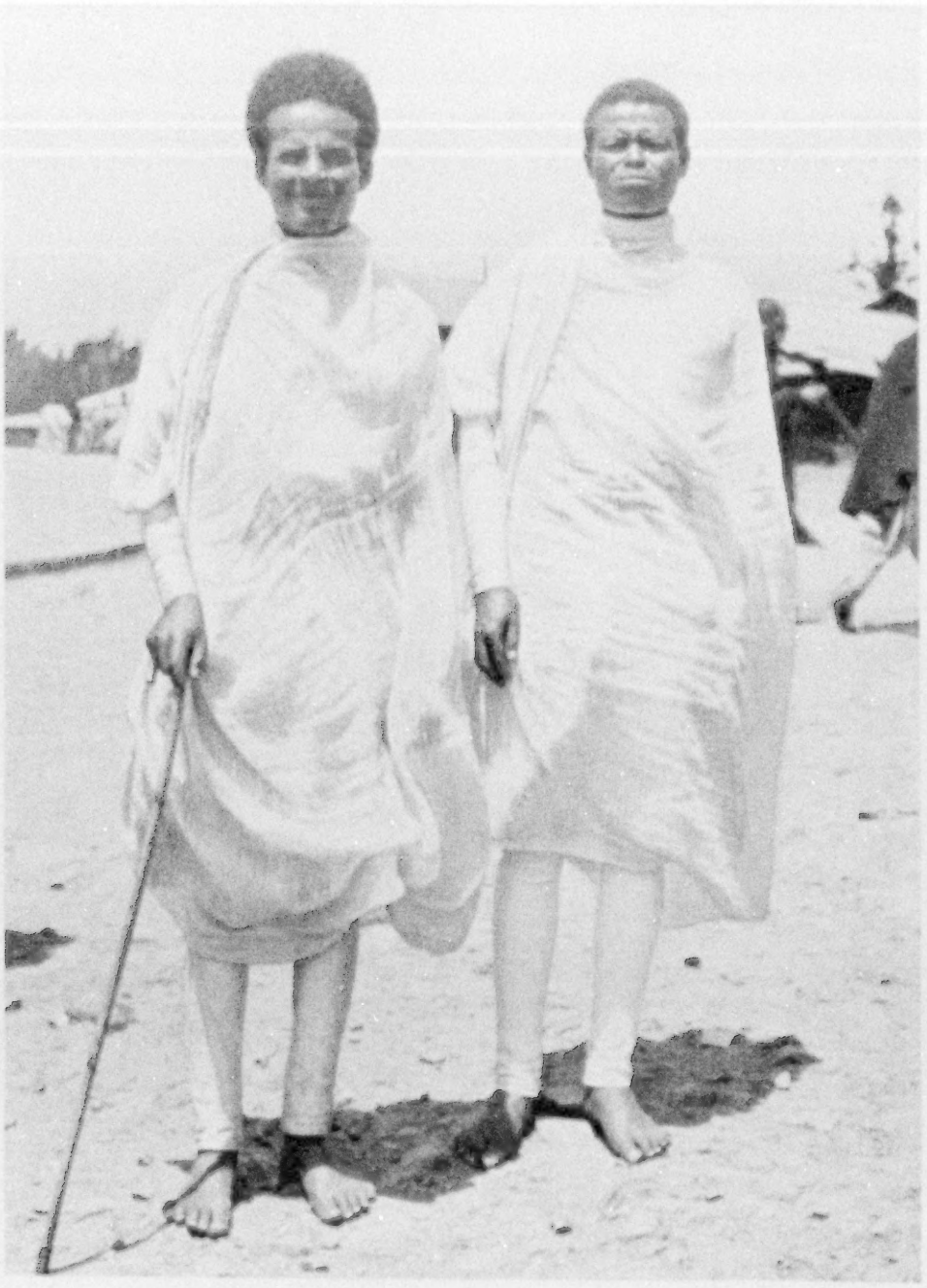
"BEAUTIFULLEST" COUNTRY IN THE WORLD

The country through which we traveled is beautiful beyond description. Mountains and valleys, forests and meadows, lakes and rivers, deep-cut gorges and sheer-walled canyons, all combine to fur-

nish such a variety of natural conditions as is rarely to be found.

Before leaving America and just after our plans had been announced, we had received a letter from an American prospector who offered us his services. Evidently he was a rough diamond, a Trader Horn of a sort, and his letter concluded by saying, "It is the beautifullest country in the world." We soon came to agree with him.

Although much of the country is thickly inhabited, the people live in small, round, grass-thatched huts, known as *tukuls*, which are built in small clusters on the tops of knolls or so nestled into the sides of the hills that they seem always to have been there. Since there are no fences or roads, no telegraph lines, and no wheeled vehicles of any kind, the appearance of smiling virgin Nature is everywhere maintained.



DANDIES

The principal garment of the Ethiopian is a wide cotton scarf, about four yards long, with which he swaths himself, leaving but one arm free (the right for men, the left for women). The way in which one drapes his scarf, or *chamma*, denotes his social or official position.

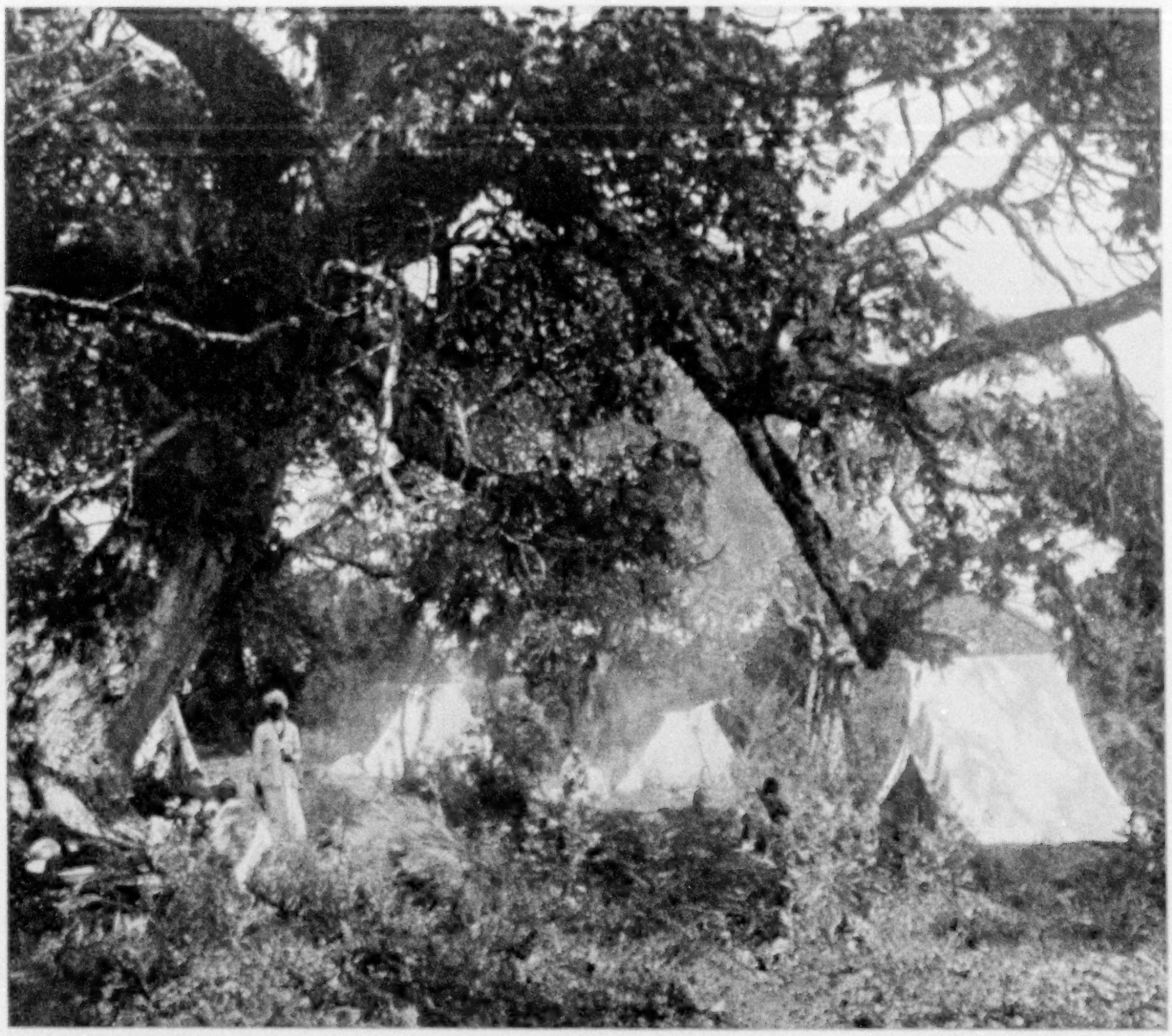
During seven months' travel we covered nearly two thousand miles of territory and made nearly two hundred camps. There was scarcely one of these that did not provide an attractive setting and all practical requirements—level ground for the tents, water and forage for the mules, shade, firewood, and opportunity to collect specimens of mammals and birds.

FLOCKS OF PINK BIRDS SUGGEST SUNSET GLOW

Ethiopia offers as delightful conditions for outdoor life as can be found anywhere in the world. In the dry season, there is practically no danger of fever, and insect pests, with the exception of fleas in the settlements, offer little or no annoyance.

In the Hawash Valley we had our first real introduction to the African fauna. Bird life was abundant; there were crocodiles in the river, and troops of small gray guenon monkeys scampered through the trees.

On both sides of the river were broad meadows of deep grass, from which rose flocks of ducks and geese; stately white storks stood scattered about, contrasting with their more graceful cousins the demoiselle cranes, which were in small parties; flocks of great white pelicans heavily



A CAMP UNDER MOUNTAIN KOSSO TREES

Great forests extend along the slopes of Mount Albasso, in the Arussi Mountains, and there are large areas of virgin timber. One species, the kosso, with leaves resembling the sumac, is especially beautiful and grows in many places. Yews of large size and cedars are also common, while on the lower slopes are the massive, wide-spreading fig trees (see page 147). The expedition cook was an adept at selecting the most beautiful site for his tent, and the other men quickly pitched theirs near his.

took wing and strung themselves out against the sky; and along a muddy slough were a few of the grotesque African marabou storks, or adjutants.

Smaller birds were scarcely less conspicuous, especially the large jaylike and turquoise-blue rollers, small slender-bodied hornbills, and gorgeous pink bee-eaters. These last occurred in close flocks, and when a hundred or more swept down to alight in an open and practically leafless tree, it was like the sudden turning on of a brilliant sunset glow.

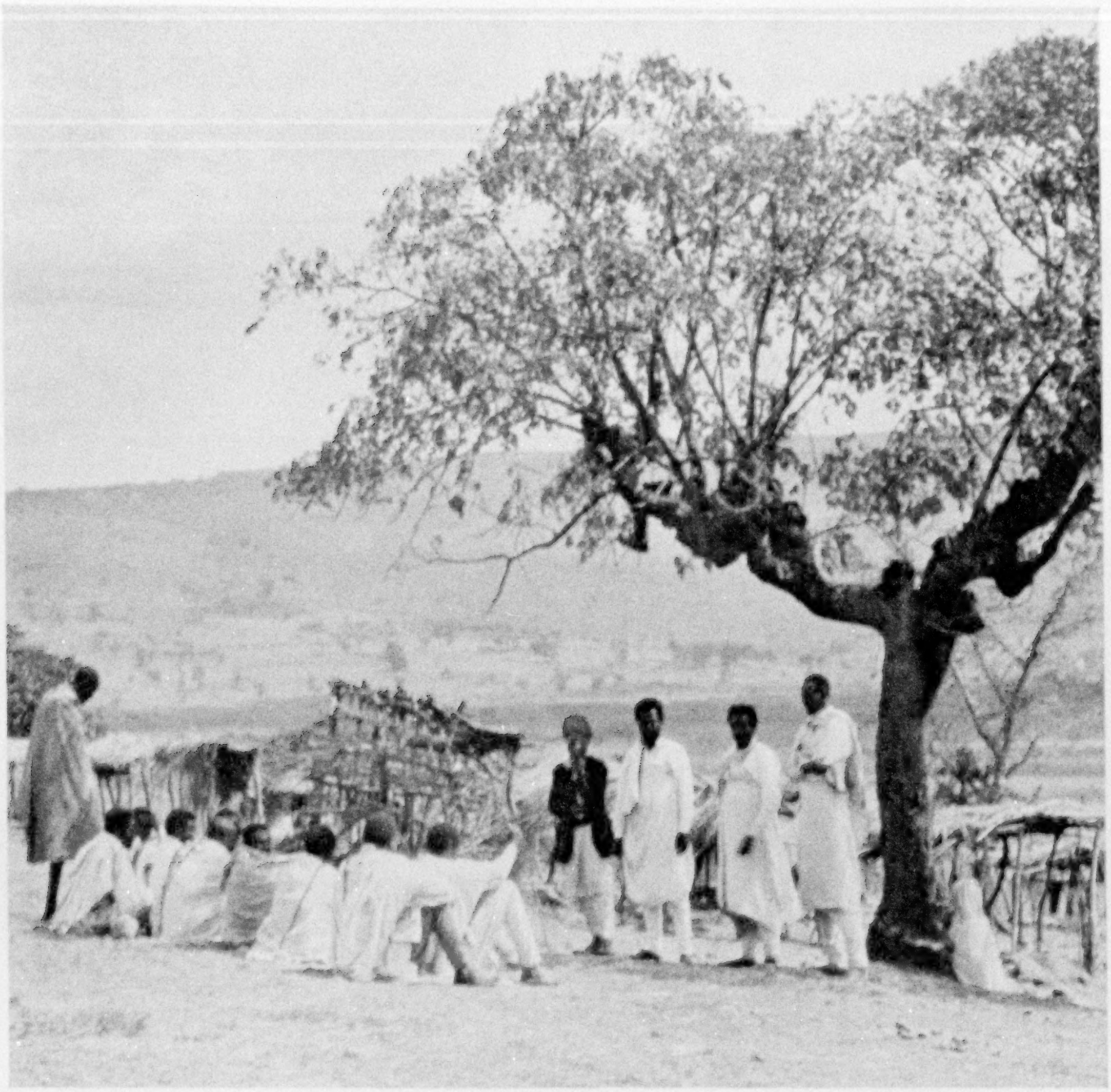
As we neared the hills a flock of guinea fowl scuttled across the trail, and as a slight eminence gave view over the meadow a pair of gazelles raised their heads above the grass in the distance.

That night the hyenas made music and the sepulchral cough of a leopard came through the darkness. The next morning a bit of rocky ground above the camp was covered with ungainly baboons of graduated sizes, grimacing and stalking swiftly from one vantage point to another.

There was no doubt we were in Africa.

HUNTING THE MOUNTAIN NYALA

Our first objective in southern Ethiopia was the group of peaks known as the Chilalo Mountains, which we approached from the eastern side, over the wide, high grassland which lies between them and the Gugu Mountains (see map, page 123). Disregarding guides and beaten trails, we looked across the plain, selected



JUSTICE IS FREQUENTLY ADMINISTERED IN AN INFORMAL, OPEN-AIR COURT

The penal law of Ethiopia is based on the Mosaic Law. For minor civil actions the court often sits in the shade of some convenient tree. The priests are the lawyers of the land, and each man pleads his own case with the aid of such friends and witnesses as he can muster.

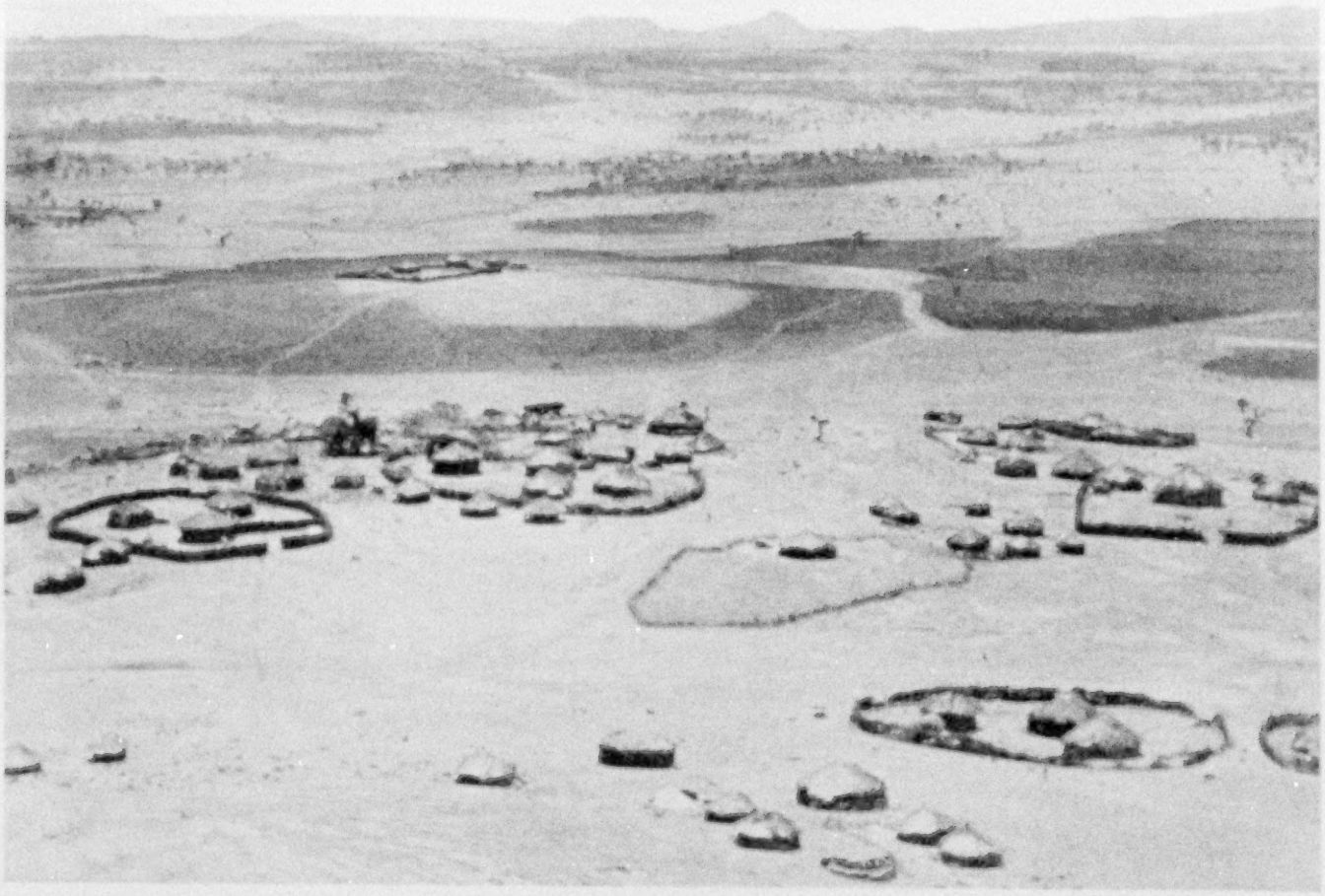
a promising section of the mountains, and headed for it.

There was little or no forest at this point, and by following ridges and making slight detours we were able to avoid the thickest of the bushy growth and ascend rapidly. Camp was made in a beautiful spot at 10,700 feet, a sunny glade partly surrounded by low trees and commanding a magnificent view both up and down the mountains. It was near the lower edge of the zone of bush heather, or giant heather, which is the principal growth at the highest levels in Ethiopia.

Mixed with this heather were a few patches of small trees and great banks of grayish green, thistlelike shrubs (*Echinops*). In effect they were thistles, but thistles fifteen to twenty feet high, surmounted by great globular florescent balls bright pink in color (see illustration, page 139).

Open ridges were studded with hoary cushions of straw flowers, or "everlastings," and moist spots were matted with mosses, sedges, and bog plants of alpine associations.

We called this place "Nyala Camp" because here we had our greatest success in hunting the mountain nyala, one of the largest and handsomest of African antelopes and one of the rarest. It is also



AN ETHIOPIAN VILLAGE BUILT IN FEUDAL STYLE

Its exposed position affords a wide view. The inclosures are now mainly for the protection of domestic animals.

THE CARAVAN FORDS A STREAM

Caravanning through Ethiopia is delightful, in spite of many petty annoyances. One often travels for hours over sterile, sun-scorched plains, and then drops by a precipitous trail to a beautiful stream, where gigantic trees line the banks. The guereza monkey (see page 143), as well as small antelope, leopard, and hyena, frequent such locations.

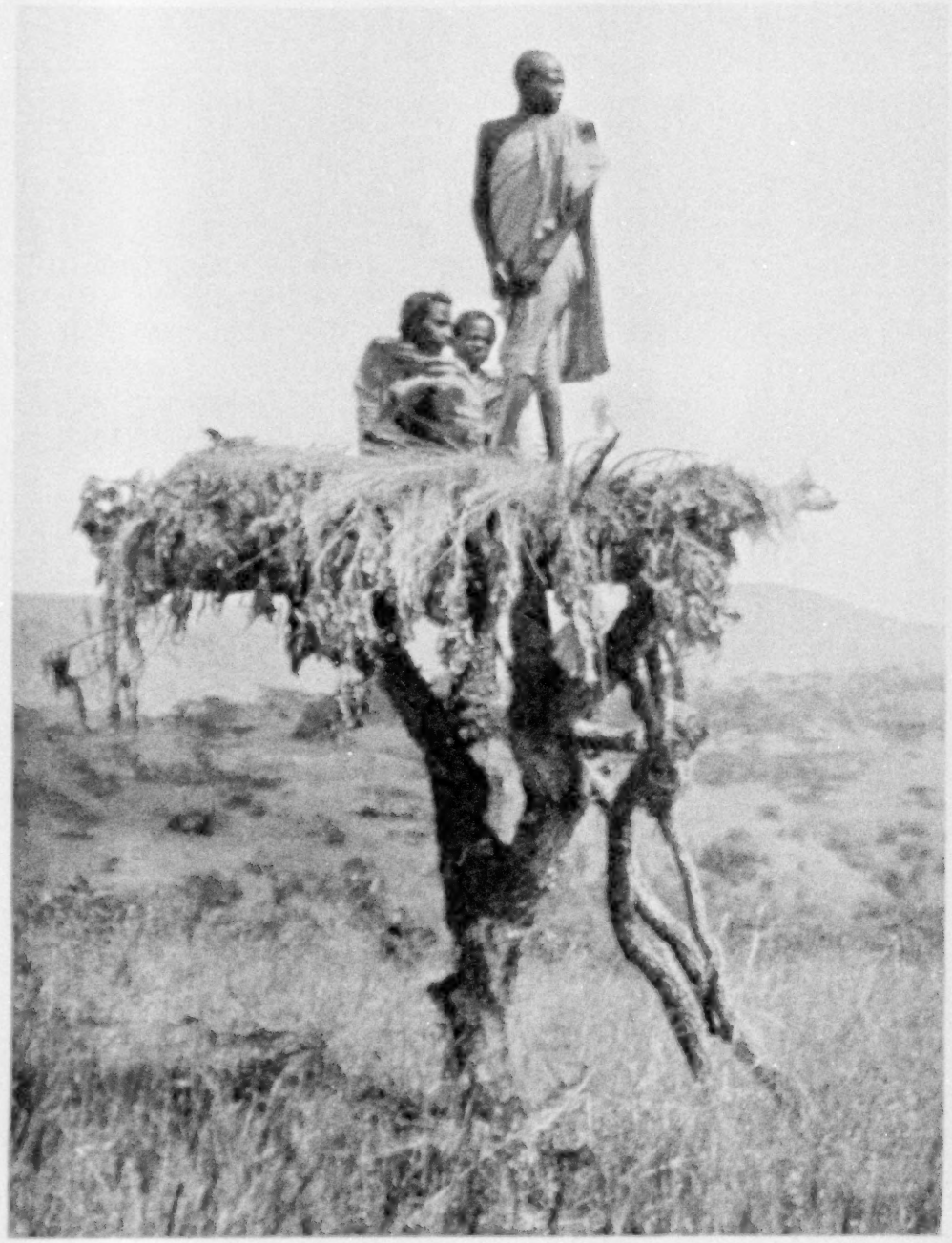
A PARADISE GARDEN IN THE CHILALO MOUNTAINS

The mountains of Ethiopia are often clothed with luxuriant forests. At nine to eleven thousand feet the author's party passed great thistlelike plants (*Echinops*) with globular flowers of pink. These thistles are from twelve to fifteen feet in height and often form an impenetrable barrier across small valleys. About the gently swaying flowers flit the small African sunbirds, gorgeous creatures of dazzling colors—green, yellow, red, and glossy black—resembling the humming bird in appearance. Moss-festooned heather (*Erica arborea*) grows to great size and has many yellow, roselike blossoms.

called giant bushbuck, and on account of its strictly Ethiopian distribution and its great beauty the suggestion has been made that it be rechristened "Queen of Sheba's antelope." It lives at high altitudes in the heather zone and in the forest just below it.

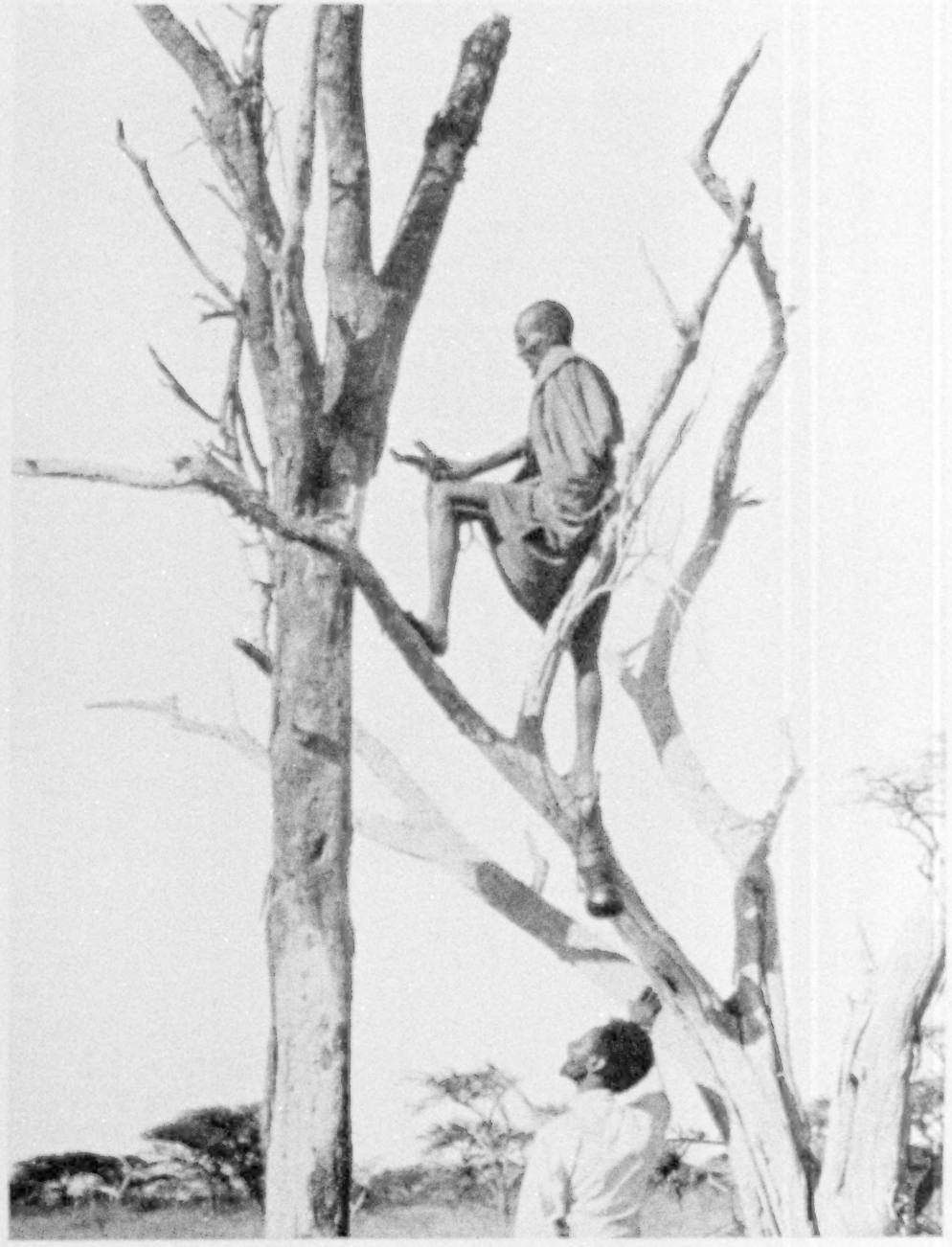
Like its relative, the ordinary bushbuck, it skulks and is given to lying in close concealment. Considering its size, its ability to hide in relatively open country is remarkable. Once, as I passed a thick bush, it fairly exploded as a great buck crashed out on the other side scarcely ten feet from me. He must have seen me coming and lay low, expecting me to go by within a few rods, but when I actually brushed against his brier patch the strain was too great for him.

Fortunately for the hunter, the nyala does at times appear in the open on high ridges or at the edges of mountain glades. In such places he presents a magnificent sight. One handsome buck, which momentarily stood at attention for me, was enlarged by the magnifying effect of a



ON GUARD AGAINST FEATHERED AND FOUR-FOOTED FOES IN THE WHEATFIELDS

It is a common sight in Ethiopia to see such human scarecrows, usually boys upon platforms in the grainfields, where they frighten away the birds and the bands of baboons. It is an ideal occupation for men who are not averse to any job which involves no physical exertion.



AN INDICATOR BIRD SHOWED THE WAY TO THIS CACHE OF WILD HONEY

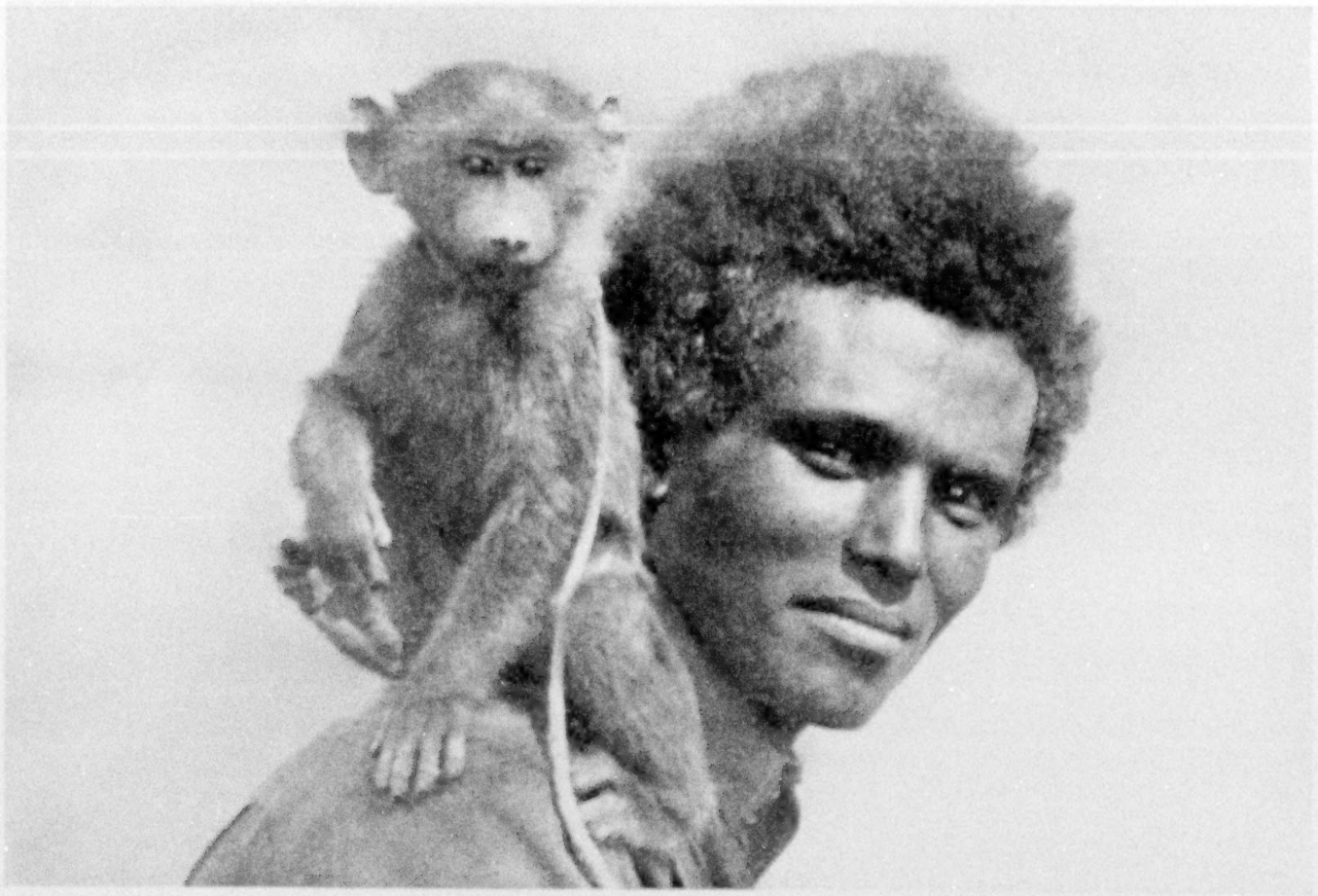
After attracting the attention of men or beasts that eat honey, a gray bird about the size of a starling frequently acts as guide to the treasure troves of the wild bees. It flutters from tree to tree until it leads them to the one containing the honeycomb. It claims its reward in the larvæ.

THE HEAD OF A GREATER KOODOO

These are among the finest of African game animals and are found in dry, rocky hills at relatively low levels.

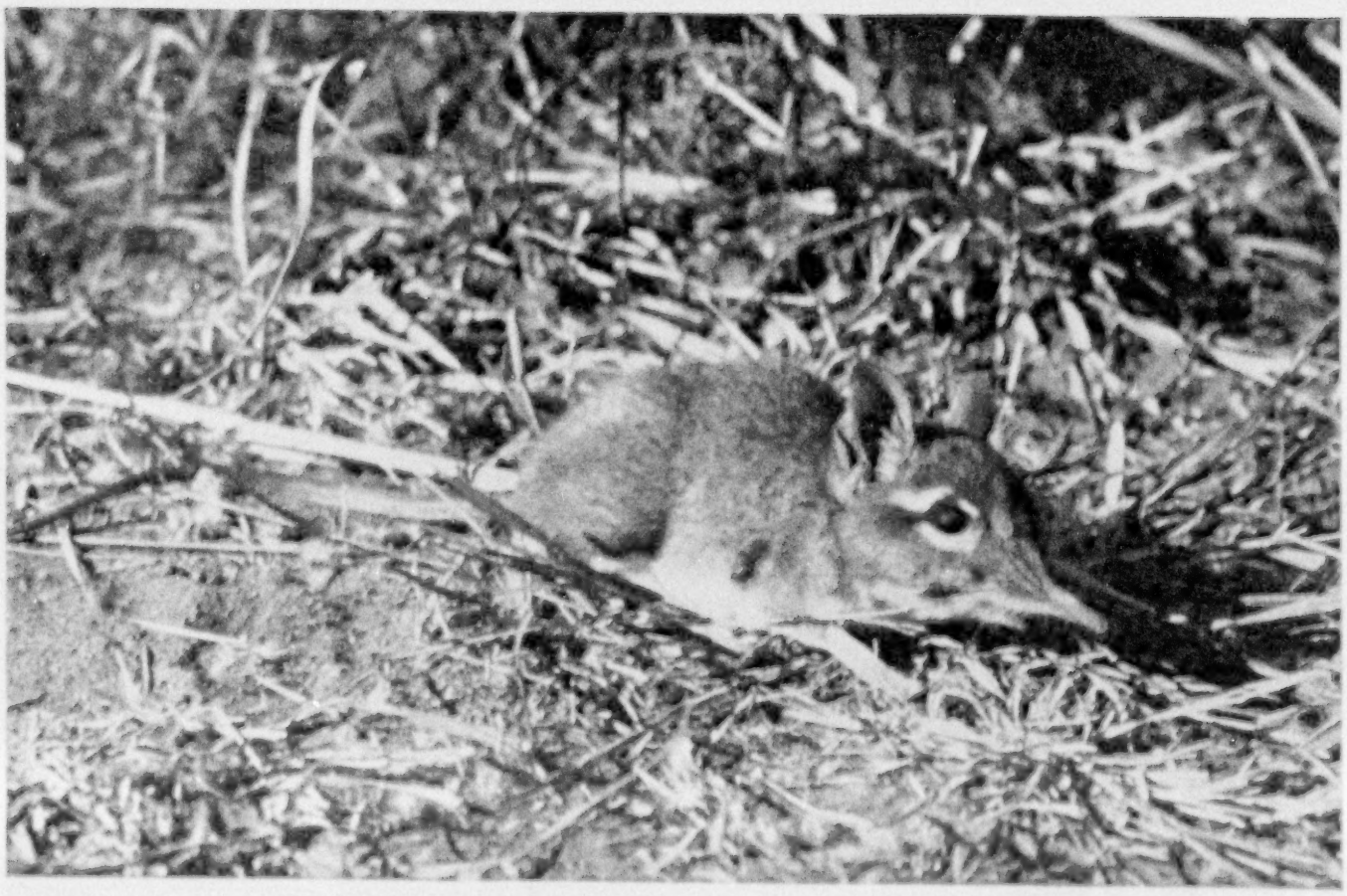
THE KLIPSPRINGER INHABITS CLIFFS AND ROCKY CANYONS

It has many of the habits of the chamois, and walks on the tips of its hoofs. When on the level it reminds one of a toe dancer.



AN ORPHAN DOG-FACED BABOON

Tinish (Amharic for "Little") provided the expedition with more fun than the proverbial "barrel of monkeys." She was a privileged member of the party and was given into the charge of Allamayu, Bailey's gun bearer. Tinish rode upon the back of a mule when on trek and slept with a slave at night, as she could not stand the cold of high altitudes.



AN ELEPHANT SHREW

This mouselike insectivore is found in the dry, hot areas of southern Ethiopia. It has a long, "trunklike" proboscis, from which it gets its name.

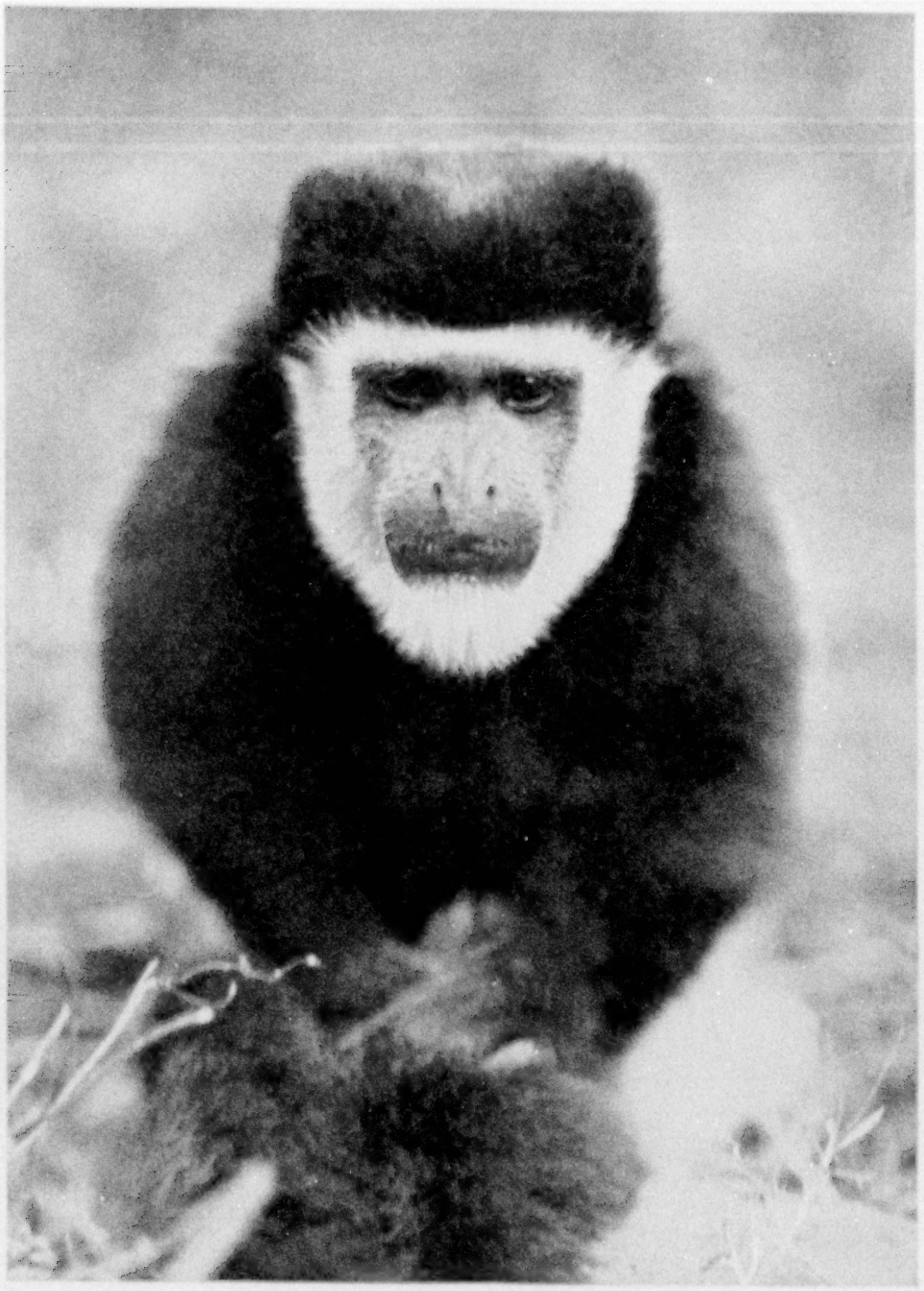
foggy atmosphere to such an extent that I could scarcely believe my eyes. It seemed impossible that the animal I had been seeking with such minute care could be so large.

THE GALLA TRIBE IS ETHIOPIA'S CHIEF SUBJECT RACE

The natives we met in southern Ethiopia were mainly Gallas, belonging to the most important of the so-called subject tribes. There are various branches of them, some of which have extended into the central and even the northern part of the country, and have become so powerful and so numerous they may almost be regarded as assimilated. They are probably of Hamitic origin and are lighter in color than the old Ethiopians. Although mostly pagan, some have embraced Christianity, while others, especially in the southeast, are Mohammedans.

The Arussi Gallas, with whom our contacts were most frequent, were conquered by Menelik and are now subject to the rule of local chiefs placed over them by the central authority. These chiefs receive no pay beyond what they can exact from their subjects, and this system is the cause of considerable difficulty.

The southern Gallas speak a language of their own. The men are herdsmen and warriors, good horsemen, good hunters, good fighters, and notorious marauders. They ride bareback on tough little ponies, and a party of them sweeping over the plain, with their long spears flashing and their lithe brown bodies nearly naked, makes a picturesque sight, suggesting American Indians of early days.



THE SOLEMN-FACED GUEREZA

The sharply contrasted black and white markings of this large, active species make it conspicuous when in motion, but it is very difficult to see when at rest. When for the first time Mr. Fuertes saw one of these guerezas make a plunge of 75 feet through the trees, he characterized it as "a hearse on a spree" (see text, page 149).

One of them who visited our camp brought his two little daughters. He seemed fond of them, but when we attempted to compliment them he shrugged his shoulders and said: "I'm very unfortunate, since I have only daughters. I wish I had a son. Women are only good to feed and care for men. I, myself, have killed men and lions, and I wanted a boy who could do the same."

Galla women do much menial work and lead rather a hard life, but Ethiopians in general, being Christians and monoga-

GALLA WOMEN ARE SKILLED AT BALANCING WATER GOURDS UPON THEIR HEADS

Gourds grow abundantly in the southern part of the country, where water is plentiful. Small gourds are carried by everyone and serve as canteens.

DRYING MEAT IN CAMP IN THE HIGH MOUNTAINS OF THE ARUSSI CHAIN

The meat, cut in thin strips and hung in the sun to dry, is eaten raw.

BEEHIVES AND BIRDS' NESTS

The hives, made of rolls of bark, or durra stalks, are often seen suspended in acacia and fig trees for the convenience of the wild bees. Weaver finches of several species build the small hanging nests which are seen throughout Ethiopia.

mists, treat women well and, especially in well-to-do circles, where there are slaves, the position of woman is far from lowly.

MANHUNTING IS A FAVORITE SPORT AMONG THE ARUSSI GALLAS

The Arussi Gallas cling to various old practices of barbarism. Among them is one decreeing that a young man before taking a wife must prove his manhood by killing a lion, an elephant, or a man. Since lions and elephants are now practically extinct in the region, human game is the most available, and the Arussi Galla seeks it among his ancient enemies of the neighboring province of Gurage.

Mutilation of a disgusting sort is a part of the procedure. The central government naturally frowns upon such practices, and they are now carried out only occasionally, in secret or in temporary outbreaks, when control is lost. In passing through Gurage we noticed slender streamers of white cloth, in groups of three or four to eight or ten, fluttering from the peaks of the huts or from poles set in front of them,

A CHIEF GOES FORTH

Feudalism still survives among the Ethiopians and no chief travels without an escort of servants and armed retainers. To do so would be to lose caste.

AN EFFICIENT FORCE OF STREET CLEANERS

Both black wings and white wings do their bit in keeping Ethiopian communities free from carrion. Ravens and vultures find a living in this way.

A STOP FOR REFRESHMENT UNDER A WILD FIG TREE: GURAGÉ PROVINCE

and upon inquiry we were informed that these were to indicate the number of men killed by the occupant—notches on his spear, as it were.

Killing and fighting, therefore, are looked upon as man's highest attainments, not only in semisavage districts, but rather generally throughout the country.

MOUNTAIN FORESTS

From our first camp in the Chilalo Mountains we passed southward into a magnificent forest on the southeast slope of the range.

The trees in this forest were mainly of unfamiliar kinds, but conspicuous among them were large cedars with drooping branches, and stately, dark-foliaged yews having pendent fruit about the size and shape of an olive. These trees have straight trunks two or three feet in thickness and rise to a height of 75 to 100 feet.

Another beautiful and interesting tree is the kosso (*Hagenia*), which grows to great size, with irregular spreading branches and a short, thick trunk with a light, scaly bark (see page 136). Its pinnate leaves and pink fruit suggest the American sumachs done on a grand scale. The fruit, which is very abundant, hangs in great clusters, like enormous bunches of pink Catawba grapes.

This fruit is gathered by the natives and crushed to make a rather heroic remedy for tapeworm, with which, on account of the habit of eating raw meat, every Ethiopian at one time or another seems to be afflicted.

FIGHTING IS THE NATIONAL AMUSEMENT OF THE GALLAS

Although a pastoral people of industrious inclinations, the members of this tribe are also decidedly bellicose. They do not molest foreigners traveling in their country, but seem to take real joy in fighting among themselves.

Farther south, in the Ghedeb Mountains of the province of Bale, we found similar luxuriant forests, rich with undergrowth and apparently in virgin condition, although in this ancient country one scarcely dares say that any part is untrodden by man.

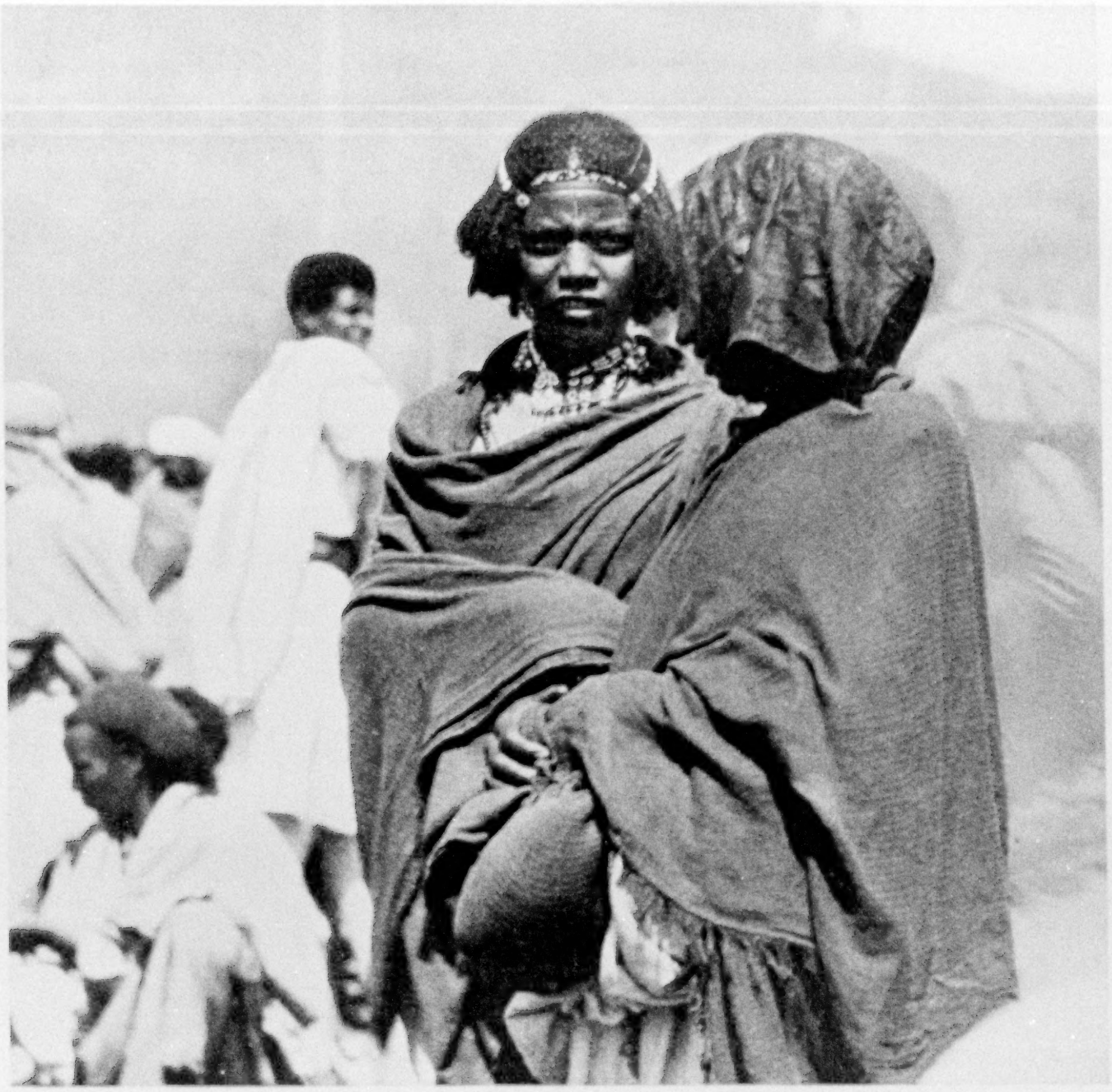
BIRDS FAMOUS FOR THE COLOR STRUCTURE OF THEIR FEATHERS

Bird life in the heavy forest was limited but interesting. Flashes of bright red here and there revealed the flight of small flocks of touracos, curious birds found only in Africa and famous for the unique character of their pigmentation, which is partly soluble in water and contains a small but definite percentage of metallic copper.

They are long-tailed, crested, and slender-bodied birds, mainly greenish in color except for great red patches on their wings, and they have the lizardlike habit of running up and down branches and twisting themselves into ludicrous positions, where they stop motionless and quizzically eye the intruder.

A few small parrots shrieked about the tree tops, and in dark solitudes richly colored trogons sat silently.

Flowering trees were frequented by one or two species of the beautiful little African sunbirds, which, although not related to them, have considerable superficial re-



GALLA GIRLS OF SOUTHERN ETHIOPIA

A few wear beads and silver in their hair, but the usual custom seems to be to place a large piece of rancid butter upon the head (see, also, page 152).

semblance to American humming birds. Always there were the clumsy, croaking, thick-billed ravens and many vultures, eagles, and smaller birds of prey.

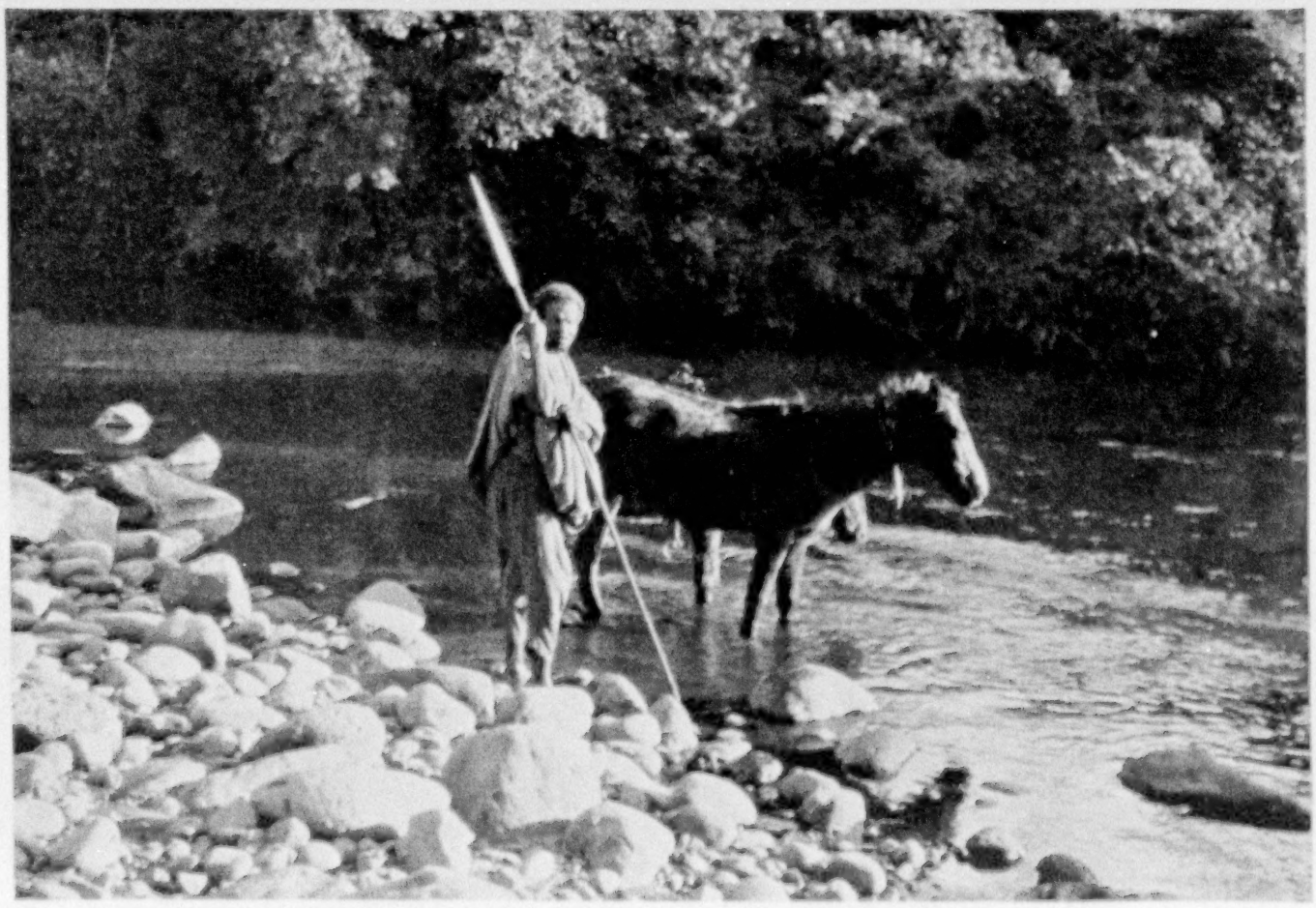
A feature of the forest life was the guereza monkey (*Colobus*), a handsome species with long, flowing black and white pelage. It is a large monkey and very active, tearing through the tops of the trees and making long downward leaps, sometimes for 50 or 75 feet, and seeming to trust to luck for a landing place. At such times it is very conspicuous, but when it chooses to hide it can do so most successfully in a very small bunch of foliage.

My constant companion, Fuertes, the ornithologist, spent most of his time with the birds, but the guereza monkeys caught his artist's fancy and he never tired of watching them. The first time he saw one crashing through the branches, with its long white-tufted tail waving aloft like a pompon and its black and white body flashing through the green, he promptly characterized it "a hearse on a spree" (see page 143).

FEW LIONS LEFT IN ETHIOPIA

Near the southern end of the Chilalo Mountains our party was divided. Baum, Bailey, and Cutting turned eastward to pass through the old Mohammedan settlement of Sheikh Hussein, and then northward through a little-known and relatively dry region which led them back to

GALLAS AND THEIR CATTLE



A GALLA SPEARMAN WATERING HIS HORSES

This tribe outnumbers all the other elements in the Ethiopian Empire. The Gallas are a Hamitic people and first entered the country as invaders, in the early 16th century. Their ravages were responsible for the destruction of many priceless old records and manuscripts which might have thrown some light on the early history of this ancient land. The Arussi Gallas were finally subdued by Menelik II, founder of the modern nation (see text, page 143).

A FLOCK OF KITES IN A KOSSO TREE WATCHING FOR A CHANCE TO STEAL A MEAL FROM THE EXPEDITION'S COOK TENT BELOW

Birds of prey are numerous throughout Ethiopia, the kite being the most common of all. It was ever present and so bold that it would dart across the cook's fire and steal food from his pans. Often, when tame baboons were feeding contentedly upon stolen bread, these kites would, in turn, dart down and steal it from them.

Addis Ababa via Hawash Station. Meanwhile Fuertes and I continued southward into the province of Sidamo, and thence northward along the chain of lakes in the Great Rift Valley.

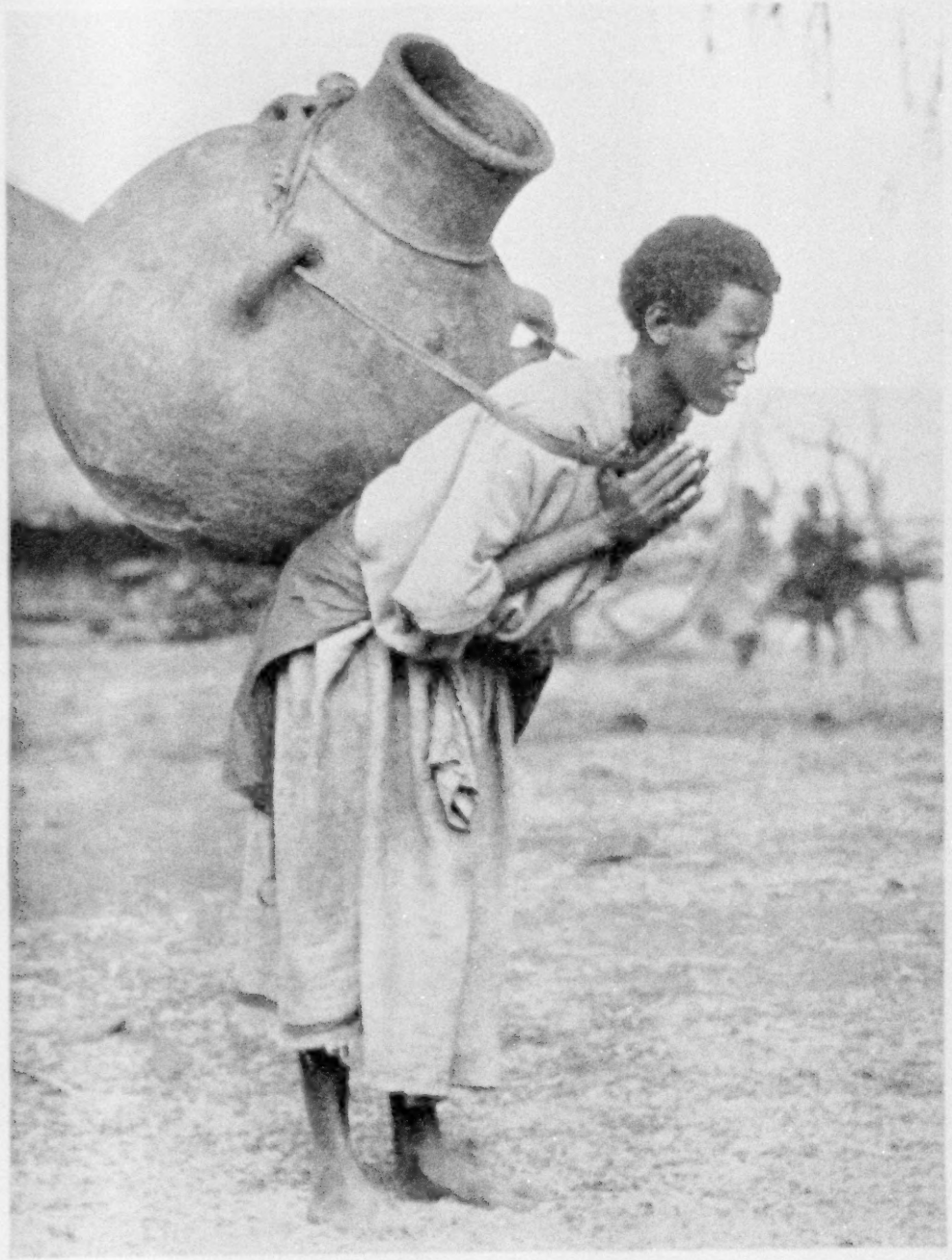
The eastern party found considerable game—oryx, waterbuck, greater and lesser koodoos, gerenuk, gazelles, and Grevy's zebras. No lions were encountered, however, and we came to the conclusion that they are nearly extinct in most of Ethiopia, being found only near its borders adjoining Somaliland, Kenya, and Sudan.

Mr. Baum relates one amusing experience with a hyena which suddenly confronted him in the twilight and which he bravely shot at a few paces, while quivering with excitement because he thought it was his first lion.

Several small antelopes are common in the highland, and rare animals like the nyala and the ibex are of great interest to the naturalist, but there is not an abundance of big game for the sportsman.

INTO THE CANYON OF THE WEBI SHEBELI RIVER

Progress southward was hindered by the Webi Shebeli, largest river of south-

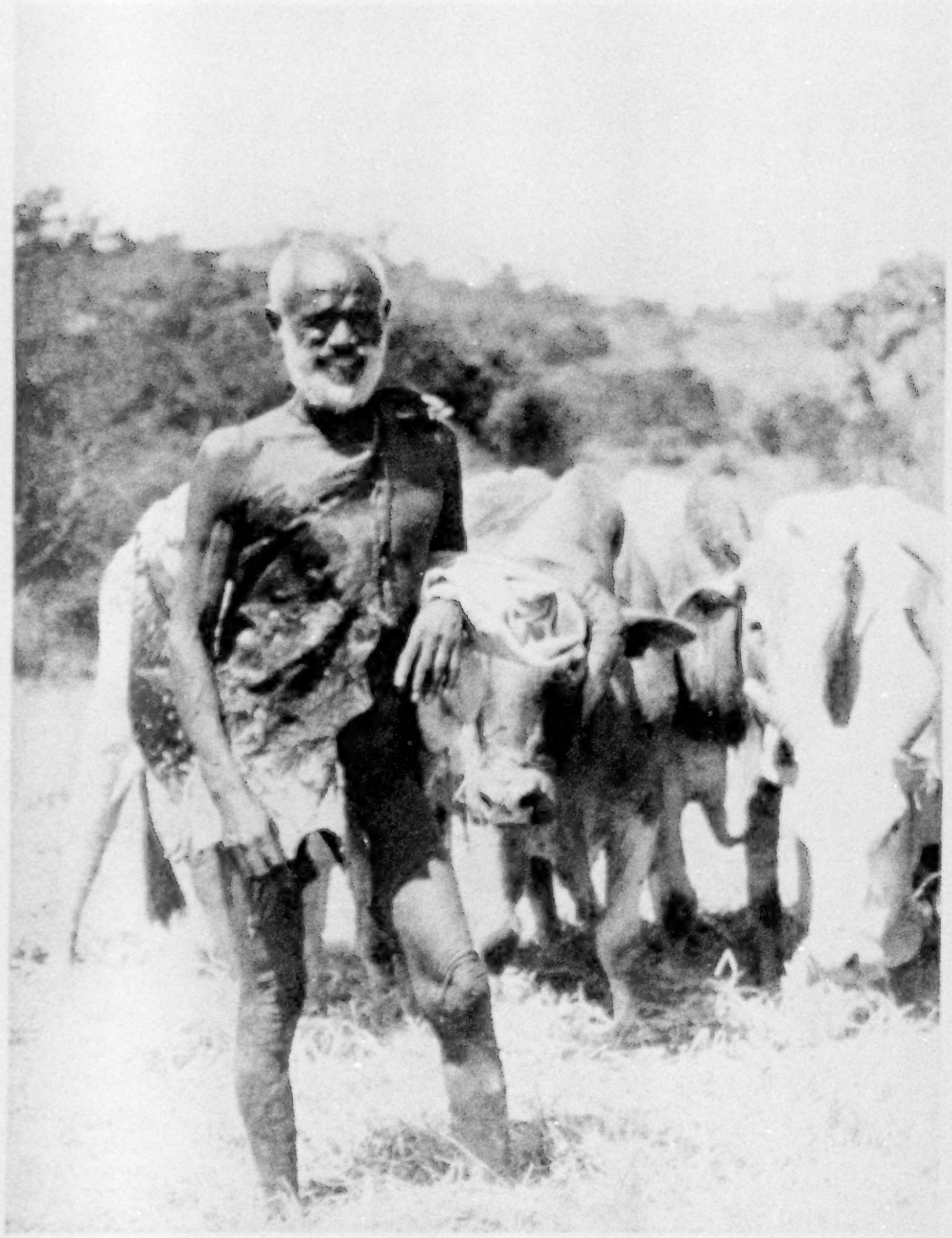


A GALLA WATER CARRIER

Ethiopian women were shy, for the most part, and it was often difficult to obtain good photographs showing them at their daily tasks. This woman is typical of those found throughout the plateau country—rather slender and delicate-featured, with curly hair, closely cut, a loose dress of cotton material, once white—and, most characteristic of all, her back bowed with a heavy weight. The large jar, a beautiful example of native pottery work, is usually kept in the hut for water or beer, while smaller jars are used to transfer water from the streams to the village.

HER FIRST GLIMPSE OF A WHITE MAN

The clothes of the women of Galla are exceedingly durable; they are made of cowhide. As the girls and women attend the herds in this country of thorns, it is necessary that they should have protection. The women often wear their mops of black hair in long ringlets, which are held in place with liberal quantities of rancid butter (see, also, page 140). A really jaunty appearance is obtained by placing a good-sized pat of butter upon the head, where the warm sun will cause it to spread evenly in all directions.



GRAIN THRESHERS

Slaves keep the oxen circling upon the straw, and as the sun climbs high in the heavens clothes are reduced to a minimum. This old fellow was reluctant to pose in his working costume, but wanted to throw on his chamma, which is over his left arm (see, also, page 135). The fact that he is a slave does not affect his good nature.

AN ITINERANT COPTIC PRIEST

A large percentage of the men of Ethiopia are priests, and the expedition often met mendicant friars. With all his worldly possessions upon his head or back and often carrying a parasol and a fly switch, such a solitary traveler trudges from one end of his world to another, but he may join a caravan for safety against brigands.

HERE BANDITRY IS STILL A VOCATION

Despite the appalling punishments inflicted on "knights of the road" by the Ethiopian Government (see page 155), they still flourish in some districts. The law of the land decrees that they shall have hands and feet chopped off for first offenses and be hanged for a repetition.

ern Ethiopia, flowing through a deep-cut canyon, basalt-walled for many miles. The grandeur of the views from our camps overlooking this canyon was most impressive, and, although it is on a smaller scale, comparisons with the Grand Canyon of the Colorado came to mind (see page 156).

The eastern section of our party experienced considerable difficulty in making the crossing, and only succeeded by swimming the mules and sending the baggage over on the shoulders of the men, who went in parties of four in water up to their armpits. They were able to keep footing only by bracing against each other and the heavy common load which weighted them down.

We emerged from the canyon of the Webi on a dry open plain in the province of Bale, which was one for which we had no special credentials and in which whites have seldom traveled.

The place seemed uninhabited, but having just crossed a provincial boundary, we were looking for the usual fuss with real or pretended customs officers and, after going a mile or two, we saw some huts from which a dozen or more natives rushed, shouting and waving their spears.

With the interpreter and two or three of our principal men, we drew off to meet them, but signaled the caravan of pack mules and the main body of our men to proceed.

The natives were an unusually dirty, rough-looking lot and almost immediately became surly. They demanded that our caravan stop, unload, and let them search our baggage. Our official passes and letters they couldn't read, and the imposing seal of Ras Taffari apparently made no impression.

Arguments became heated and threatening looks passed about until it was evident quick and decisive action was necessary. Therefore we told them flat-footedly that our authority to proceed was clear, that we intended to do so with or without their permission, and that if they attempted to stop us our men would be given orders to shoot. With that we turned and left them

standing, still arguing among themselves, but making no move to follow us.

This was in the nature of a bluff on our part, since of course shooting was the last thing we wanted to start, but it had the desired effect.

As we look back upon this, we do not consider that it was a very dangerous situation, but at the time it was exciting. It is true that our opponents had only spears, while a half dozen of our men had rifles; but we were greatly outnumbered and the surrounding hills were full of hostile natives.

A MOMENT OF REAL DANGER

As to the loyalty of our own men, there was no question. Here, and at other times, they proved conclusively that they would gladly fight with us and for us. The Ethiopian loves a fight, and, once started, he is likely to be reckless of consequences.

THE GALLOWS TREE IN ETHIOPIA

Quick justice is meted out when a bandit is apprehended in the land over which Ras Taffari rules. Here the culprit hangs from the cross-arm in the foliage.

Some time later we had a really dangerous moment with a more remote tribe. Fortunately, it was only a moment, and it illustrates the only serious and unavoidable danger with which foreign travelers in Ethiopia have to contend. This is the possibility that the men of one's own caravan may quarrel with local natives, starting with some trivial matter, but rapidly leading to high words, passion, and finally bloodshed, in which case the whole countryside is aroused and the party's chance of escape is small.

In the case mentioned one of our guards, with orders to keep loafers and small boys out of the camp, had extended his authority to a visiting young man, who was the son of a chief and who considered himself too important to take peremptory orders. He therefore demurred, and the guard beat him with a stick and tore his clothes.

The young man was enraged and rushed home for his gun, loaded it, and returned a few hours later with manslaughter in his heart. Stealth was no part of his method, although we afterward learned that he had friends, also with loaded guns, posted in the bushes. He appeared suddenly, livid with passion, and confronted our man, asking him to defend himself.

The guard was my own syce and gun-bearer, carrying my rifle, and although he had never been allowed to fire it, he had

CROSSING THE WEBI SHEBELI, THE PRINCIPAL RIVER IN SOUTHERN ETHIOPIA

The stream has cut a great gorge through which torrents rage during flood time. The author found the water too deep for mules to ford, so all baggage was transported upon the shoulders of the expedition's men. The immaculate young gentleman at the right is the party's French-speaking interpreter.

cartridges for it and at once began shoving some into the magazine. Meanwhile our other armed men pulled cartridges from their belts and at once assumed defensive attitudes.

It was all a matter of seconds, and Fuertes and I, luckily present, but at the time entirely ignorant of the circumstances leading up to the outbreak, rushed in, shouting at our men to stand back and calling for the interpreter to bring the matter to a parley.

We placed the blame on our own man and pronounced a fine upon him, to be paid to the incensed stranger. At the same time I drew a few small coins from my own pocket and offered them ostensibly as recompense for the torn clothing.

The young man was mollified at once, with the result that a situation which might have resulted in the loss of several lives, perhaps including our own, was settled for twelve cents in American money.

RECALCITRANT GUIDES IMPRESSED INTO SERVICE

Our relations with the Gallas, and in general with other tribes, were for the most part pleasant and friendly, and we often employed them as hunters and guides.

The trails are little more than cowpaths, constantly forking and running in all directions. In order not to lose time between main points, therefore, it was necessary for us to have local guides from day to day. These guides were furnished by the local chiefs, were paid for their services, and usually were very glad to go with us.

In one place in the far south, however, we had considerable difficulty with guides. This was near the province of Walamo, where a French traveler had been killed two years previously. It was the consensus of opinion that his death had been due to his own excitable and ill-advised actions, but his government protested and Ras Taffari was induced to make an example of the natives supposed to be implicated, and after some sort of trial eleven of them were hanged.

In the region where this tragedy occurred we found the natives not hostile, but decidedly inclined to keep out of our way. The chiefs were very solicitous for our safety, but the rank and file simply didn't want to be found within gunshot of us. The result was that we would go to a chief and ask for a guide, and after he had assigned one to us we would start out, but at the first opportunity the guide would dodge into the bush and disappear, forfeiting our promised reward and leaving us adrift.

We finally placed the guide under guard and marched him along at the head of the caravan between two armed men. In one case, through the leniency of the guards, or perhaps through collusion, the guide was permitted to visit alleged friends in a hut along the way. When he failed to reappear the owner of the hut was seized and told he must take his place.

He protested loudly and his women and neighbors gathered around, wailing and making dire predictions. When they realized we meant business, however, they scattered, and in a short time shouts were heard from a thick patch of bananas near by, and soon a crowd came out, dragging the original guide, who ultimately remained with us voluntarily for two extra days, after contact with our men had convinced him he was in no real danger.

At one time, while traveling without a guide, we came to a small village, and as we approached we could see the inhabitants scurrying into their huts. By the time we arrived the place seemed deserted. One or two women remained in their doorways, but no men were in sight.

Many trails led out and the locality was very boggy; so for a few miles at least a guide was essential.

Selecting the most important-looking habitation, our interpreter started to enter and search for a man; but his progress was immediately barred by a young woman, who appeared at the entrance and had to be forced aside. No man was found inside, although we felt sure we had seen one go in. Meanwhile we sent out a small scouting party, which soon returned with a trembling old man.

Women began to gather about him; then two scared young men joined the group, declaring that they were the captive's sons, and that they would take his place rather than have him impressed into service as a guide. This was quite satisfactory, and a few hours later, when they were dismissed and rewarded, their man-

XUM

AN EXAMPLE OF ETHIOPIAN ARCHITECTURE

As in this odd edifice at Debra Markos, builders use any material at hand. But wood is scarce, so scarce, in fact, that the capital has migrated again and again to be nearer trees. Then eucalyptus groves were set out at Addis Ababa to insure fuel, and it has remained the seat of government.

ner had changed and they left us smiling and happy.

HOSPITALITY ALONG THE WAY

Wherever we went the hospitality of the various chiefs was a never-failing source of interest. From Ras Taffari, in the capital, down to the shum, or little headman, of the smallest village on our route, practically all officials received us graciously and courteously. They insisted on doing it formally, however, and much time was consumed in visiting and being visited when we wanted to get on our way and carry on our work.

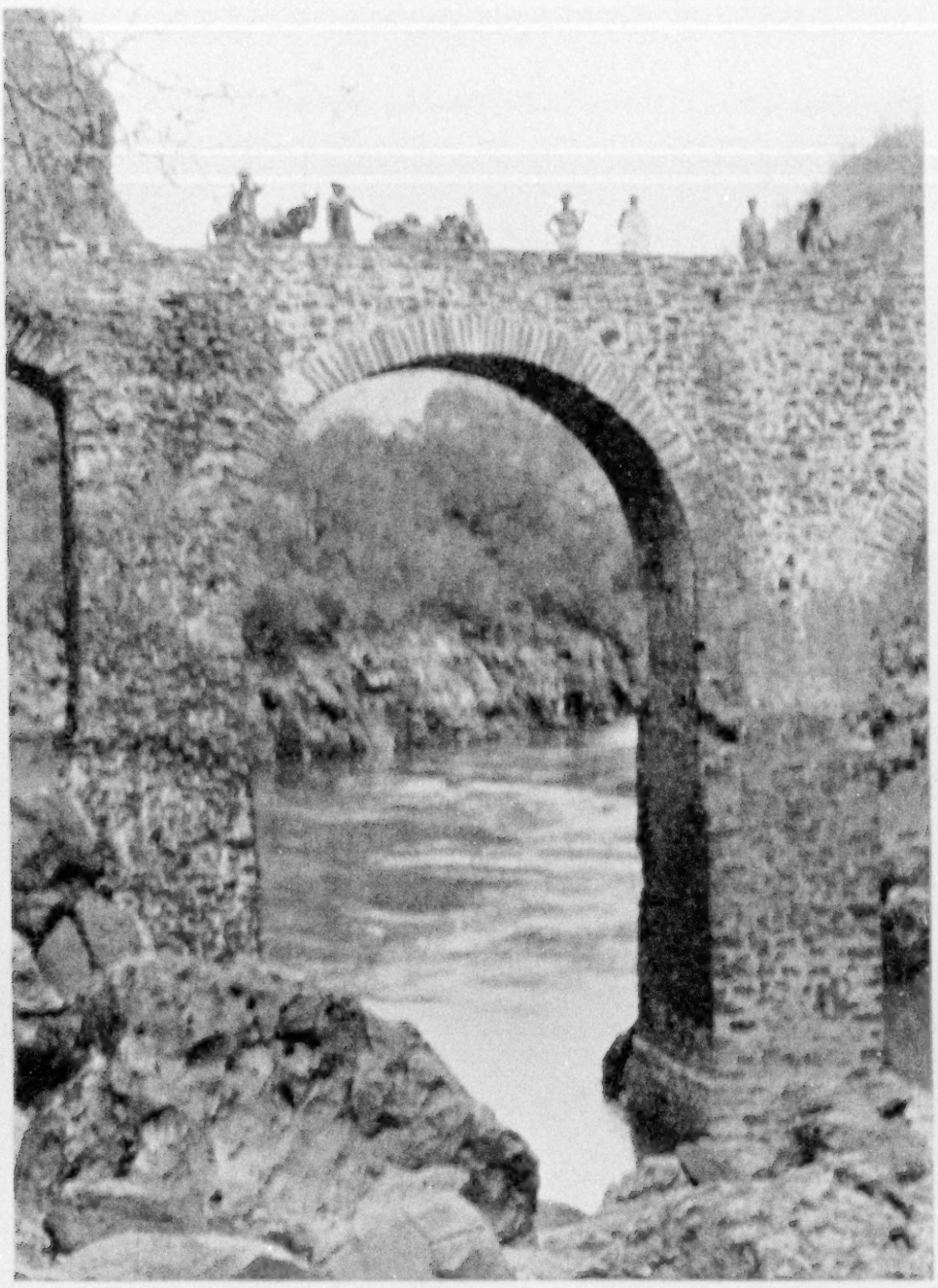
Often no sooner would camp be pitched than a shum, all dressed up and followed by his vassals, would appear to pay his respects and invite us to return his call. The usual procedure was to take him to our tent, where a table would be set, and our boys would bring him food and drink. He would then ask us all sorts of questions about ourselves and the great world, of which he knew nothing except from hearsay.

Frequently the conversation would be largely geographical and an ever-recurring subject was the shape of the earth. Most Ethiopians believe it is flat, but it was in-

teresting to find them beginning to have doubts and recognizing that at least some other people think it is round.

Local chiefs among the Gallas and other tribes in much of southern Ethiopia have been sent there by the central government and frequently are men of character and intelligence superior to their subjects. One who came to visit us in Arussi was of a very sweet and gentle disposition, with a benevolent face and none of the hard warrior characteristics. In the course of entertaining him we displayed some of our specimens, opening a chest with trays filled with skins of birds and small mammals. He looked at them for a moment and then said thoughtfully: "I can understand killing lions, hyenas, and animals of that sort, but it seems a pity to kill these beautiful, harmless birds. Do you think God will like that?"

This was rather a poser; but, since he seemed very appreciative of the beauty of the birds, I explained that these particular specimens could be spared from Ethiopia, where only a few people noticed them, whereas we were taking them where they might be enjoyed by thousands who had never seen them before. He saw the point at once.



OLD BRIDGES REMIND THE TRAVELER OF PORTUGUESE INVADERS

Besides more impressive architectural works at Gondar (see page 160), the Portuguese left several substantial bridges in northern Ethiopia. These are used by the Ethiopians, but have not affected any of their own work, for their bridges are few and primitive in character.

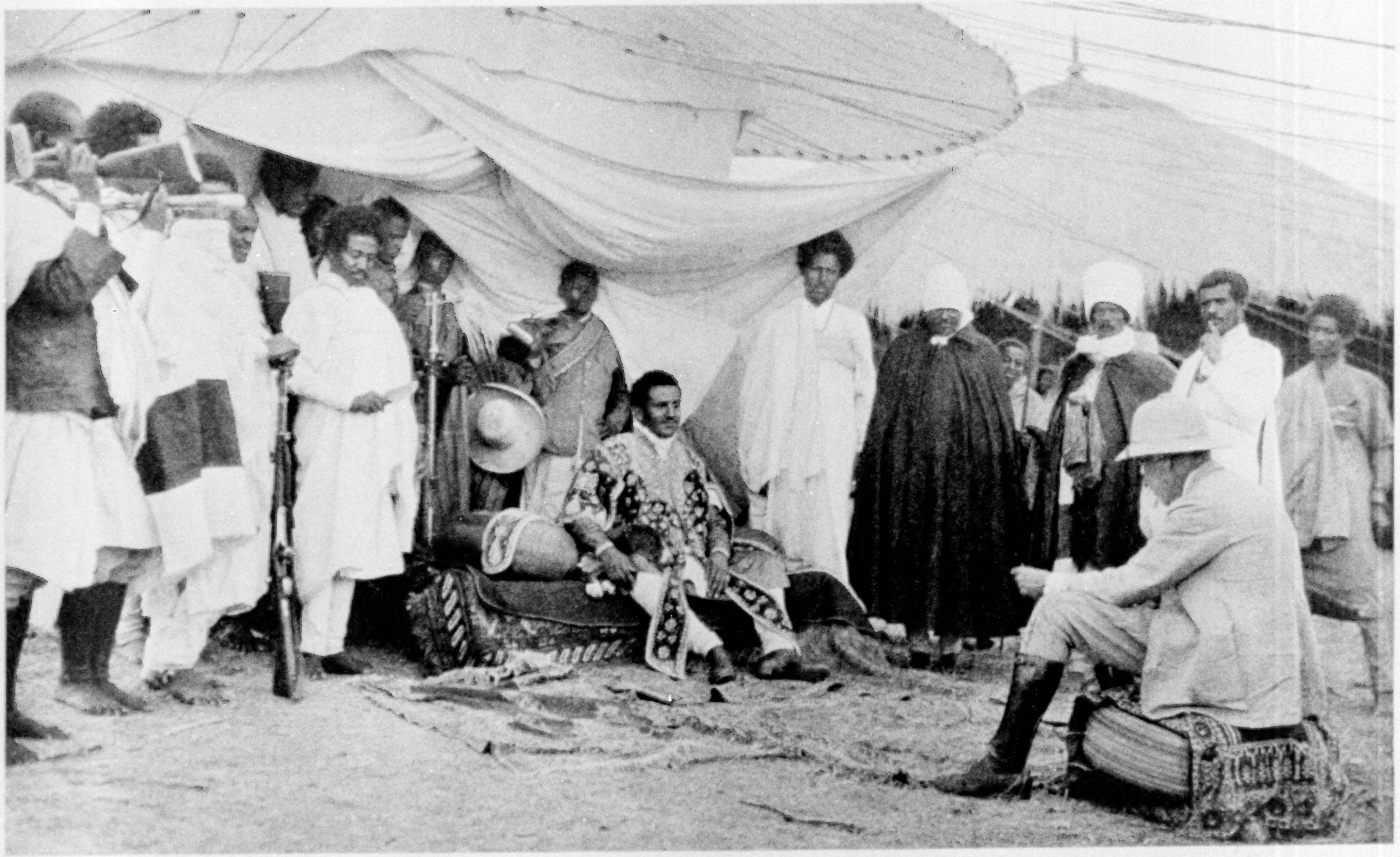
MENELIK NOT YET FORGOTTEN

The loyalty of many of the minor chiefs to Ras Taffari was apparent. When shown our letters from him, they would take occasion to extol him with much feeling, and when we inquired if they could fulfill our requests for guides or assistants, it was common for them to smile and reply in effect: "It isn't a question of whether I can or will. I must, for my superior orders it."

This, of course, depended somewhat upon the individual. In one rather remote place, as our papers were being examined, a bystander interjected: "Ras Taffari! Who is he? Hurrah for Menelik!" At another time a rather important chief said, with a quizzical look: "Ras Taffari is all very well, but I am proposing to entertain and assist you on my own account."

WHAT STORMY SCENES HAVE BEEN ENACTED UNDER THE WALLS OF THESE RUINS AT GONDAR!

Erected in the middle of the sixteenth century by the Portuguese, who came to help the Christian Ethiopians in their fight against the Mohammedans, this wonderful example of medieval European architecture seems to have had no influence upon the architecture of the native, as exemplified in the grass huts in the left foreground. As one wanders about the ruins of this Old-World city, with its towers, drawbridges, and dungeons, one can conjure in his imagination the mailed knight upon his dashing charger, the fair lady, and the cowled monk. When the Portuguese were expelled the Ethiopians seem to have made no use of the buildings, which are now in a state of decay.



PAINTING THE PORTRAIT OF A YOUNG CHIEF OF THE LAKE TSANA REGION

Ethiopian artists do only very crude work and they were quick to appreciate the superiority of the skill of Mr. Fuertes, the artist of the expedition (see text, page 127).

NEARLY A QUARTER OF ETHIOPIA'S MALE POPULATION SERVES THE COPTIC CHURCH

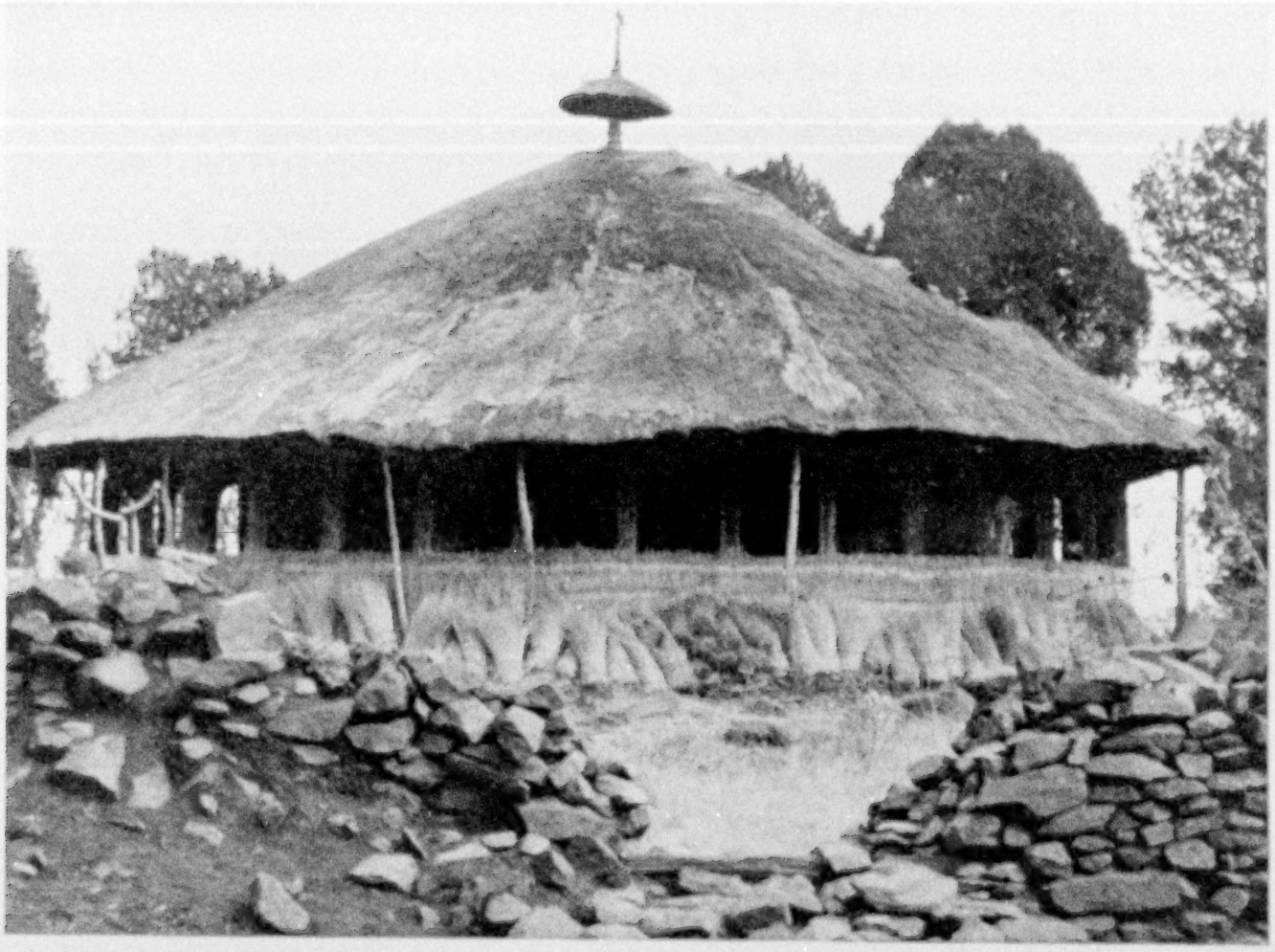
No examination and only slight formality is necessary to be ordained a priest or deacon in the land where Sheba once ruled, but a cash contribution is an essential requisite. Despite the lack of preparation for office, the holy men wield a mighty influence, for they are the interpreters of the ancient law that governs the land. Note the ceremonial drum and beautiful oriental rugs in the foreground.

After a shum had visited our camp it was usual for him to send us a gift of food, the amount depending upon his wealth and importance. Sometimes it was only a chicken or a few pancakes of native bread, a jug of milk, or half a dozen eggs.

It was not until we reached the province of Sidamo and camped in the precincts of its eccentric and powerful ruler, Dejazmatch Balcha,* that we received really lavish attention. Here, immediately after our tents were set, a long line of slaves marched gravely up, bearing baskets of bread, jars of hot pepper sauce, gallons of *tej*, or honey beer, chickens and eggs by the dozen, hay and barley for our mules, bundles of firewood for our camp, and live stock on the hoof—a couple of sheep and, finally, a big fat ox.

Such large gifts were embarrassing, for we could not offer money in return and our stock of gifts was not large. Balcha at least pretended that he wished no return, and, as circumstances fell, he got none; for, although we had set aside a small rifle

* Since our return, it is reported that Balcha, with an exaggerated idea of his power, gathered his cohorts and marched on Addis Ababa. His attempt to storm the capital was frustrated with little or no loss of life and he himself was captured and imprisoned.



A CHRISTIAN CHURCH IN ETHIOPIA

All places of worship are much alike throughout the Empire; they are usually built upon high hills, surrounded by gigantic cedars and many-pronged euphorbias. When a traveler is crossing one of the wide, treeless plateaus and sights a large clump of trees, he may be sure he is nearing a church. The cool shade, with a medley of bird music coming from the depths of the surrounding verdant vegetation, is a great contrast to the heat of the plateau. The churches are large, circular, thatch-roofed buildings, but are of solid construction, with immense beams for the framework. There is a small square room in the center, a sort of "holy of holies," in which the "ark of the covenant" and sacred objects are kept. Only the priests have access to this room. A broad, gallerylike room encircles the holy place, where the congregation mills about and prays. The walls are decorated with crude drawings of saints, devils, and dragons. Christian people are drawn full-faced, while devils and evil persons are shown in profile only.

for presentation to him, a change in our route made its delivery impracticable.

The practice of supplying food to armies on the march or to important travelers, either native or foreign, is called *dergo* and is of long standing. Since it is carried out as a sort of enforced round robin, it is in reality a tax upon the people.

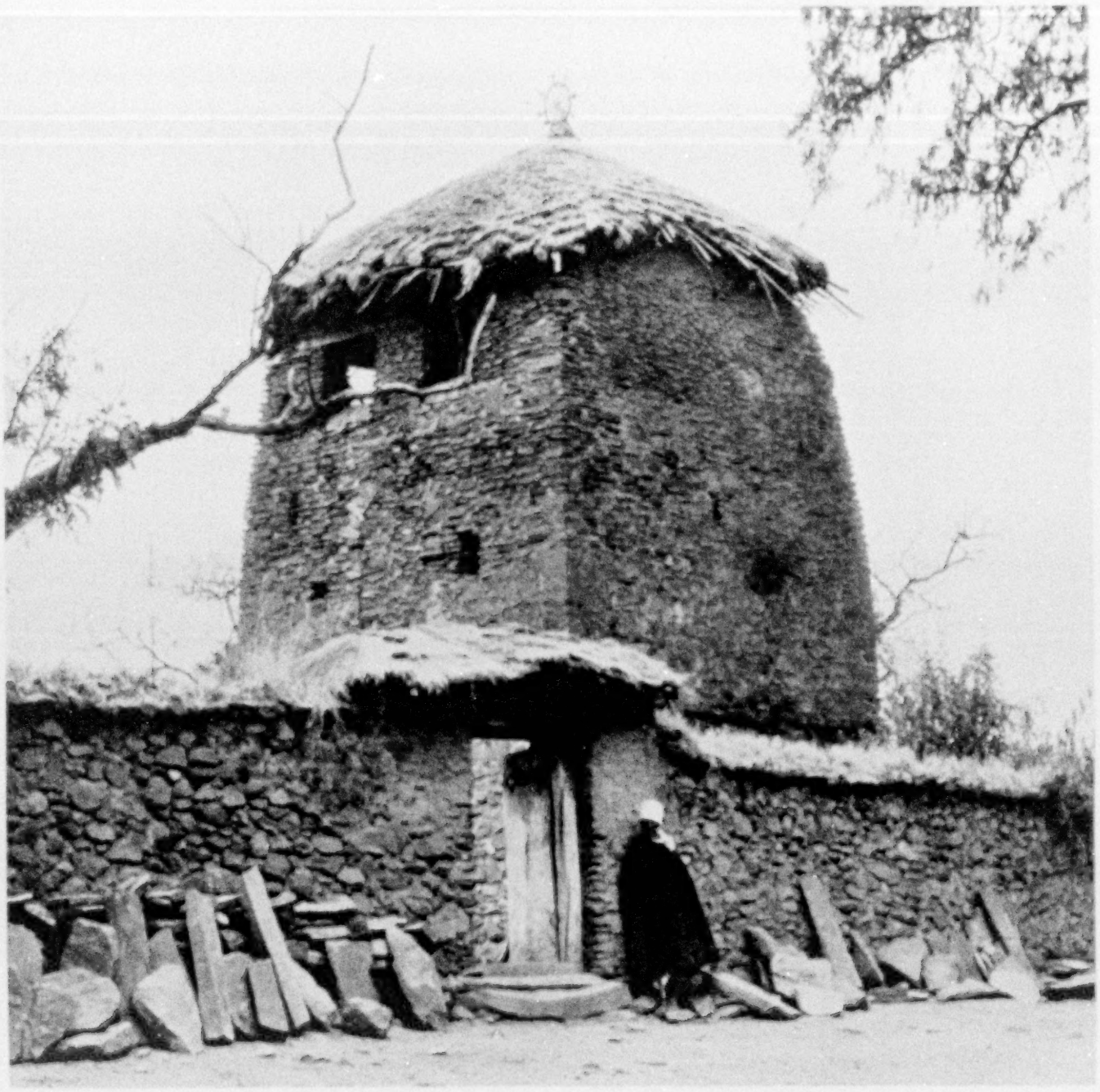
BAMBOOS, BANANAS, AND COFFEE

Balcha ruled his province with a firm hand. We found many evidences of his efficiency.

Over much of the province there is a heavy growth of bamboo, which not only affects the natural appearance of the region, but marks the works of man. It serves for the construction of larger and better huts than were seen elsewhere, and the practice of building stockades and inclosures is widely followed. Easily constructed but very practical bridges—soft, yielding affairs, entirely of bamboo, often precarious looking, but in reality very tough and strong—were found over all the small streams.

The general cultivation of a banana plant, the starchy root of which is used as food, also serves to give Sidamo an outward aspect very different from the other provinces we visited. It was here, also, that we entered the coffee region and began to meet trains of mules and donkeys loaded with bags of the beans bound for Addis Ababa and for export to the world.

Coffee is native to this part of Ethiopia, which includes the province of Kafa, somewhat to the westward (see map, page



A STOREHOUSE OF KNOWLEDGE IN NORTHERN ETHIOPIA

This primitive structure was in charge of priests and was found to be filled almost to overflowing with old illuminated manuscripts in the Geez language. The volumes were roughly bound with boards and encased with sheepskin.

123), and from which even the word coffee may have been derived. Early in the fifteenth century coffee passed from this region to Arabia, and thence to its present world-wide use.

MANY CHANGES AT ADDIS ABABA IN THREE MONTHS

Sidamo was our southernmost point. Here we turned northward and made our way back to Addis Ababa, threading among the beautiful lakes which occupy the northern extension of the Great Rift Valley.

Ras Taffari again received us courteously and provided credentials for travel in the northern provinces. The caravan was reorganized, specimens were shipped, and miscellaneous business transacted.

Although only three months had elapsed since our first visit, we observed many changes in the capital. New streets had been opened, grading of others had progressed, several important new buildings had been finished, and a general air of activity was evident. Some additions and changes had been made in the foreign colony, and it was rumored that an American diplomatic representative was expected.* Automobiles had increased in

* Addison E. Southard, U. S. Minister Resident and Consul General, reached Addis Ababa and established the first American legation in Ethiopia on March 1, 1928.

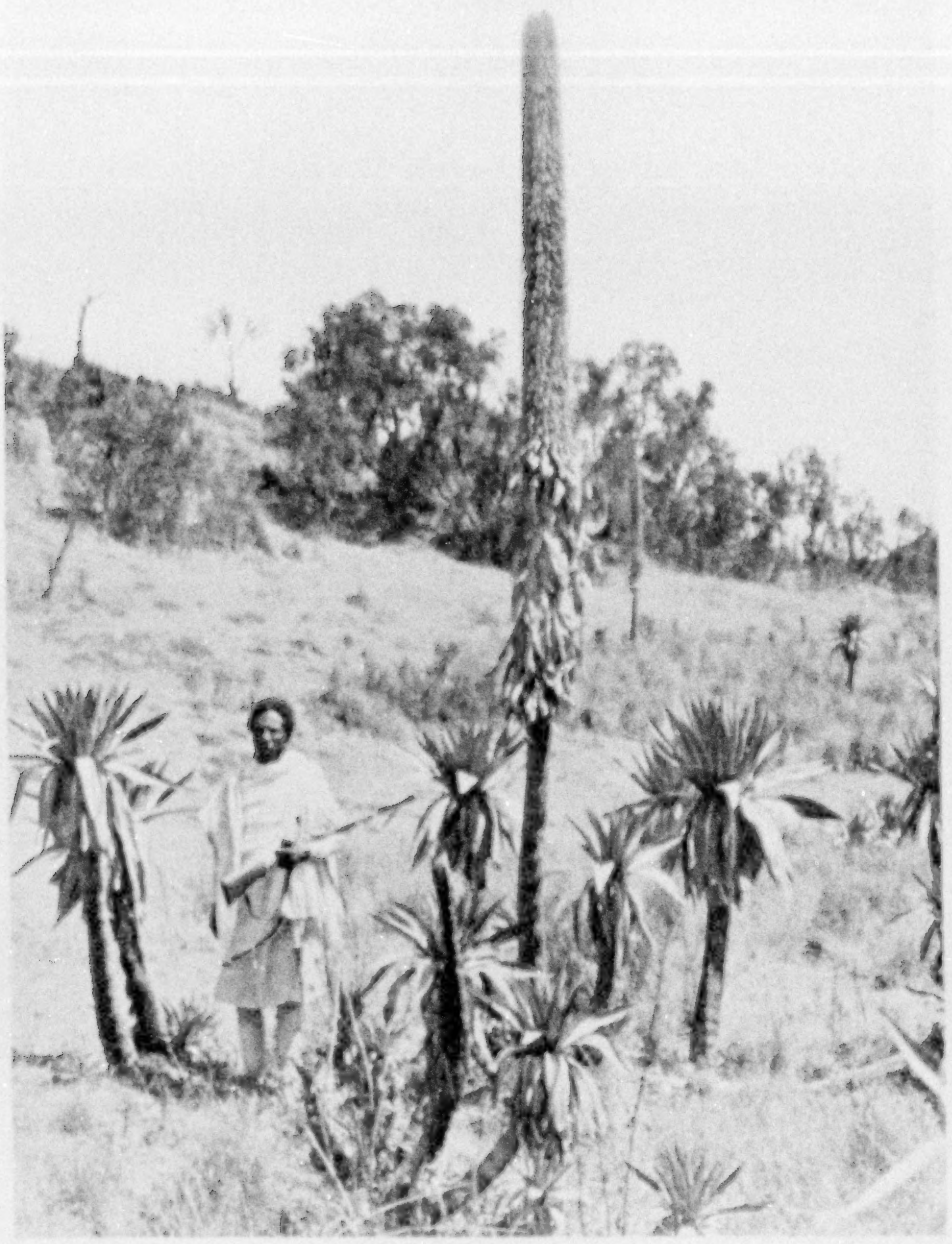
number, and just before we left for the last time a traffic officer was stationed at the principal street intersection!

CANYON OF THE BLUE NILE

Late in February our entire party started northward with a replenished and improved outfit, an enlarged and selected native personnel, and a feeling of confidence born of the experiences behind us.

We passed rapidly through central Shoa over grasslands which were hard and dry, although a few months previously they had been largely covered with standing water and frequented by thousands of water birds.

The trail led across the canyon of the Muger River, a scenic gorge of no mean dimensions, and thence onward to the famous Abbai, or Blue Nile. This extends for many miles and effectually cuts off the northern provinces of Ethiopia from the central and southern part of the country. During a great part of the year it is quite impassable, and this condition gives to the chiefs of the northern provinces a large measure of independence.



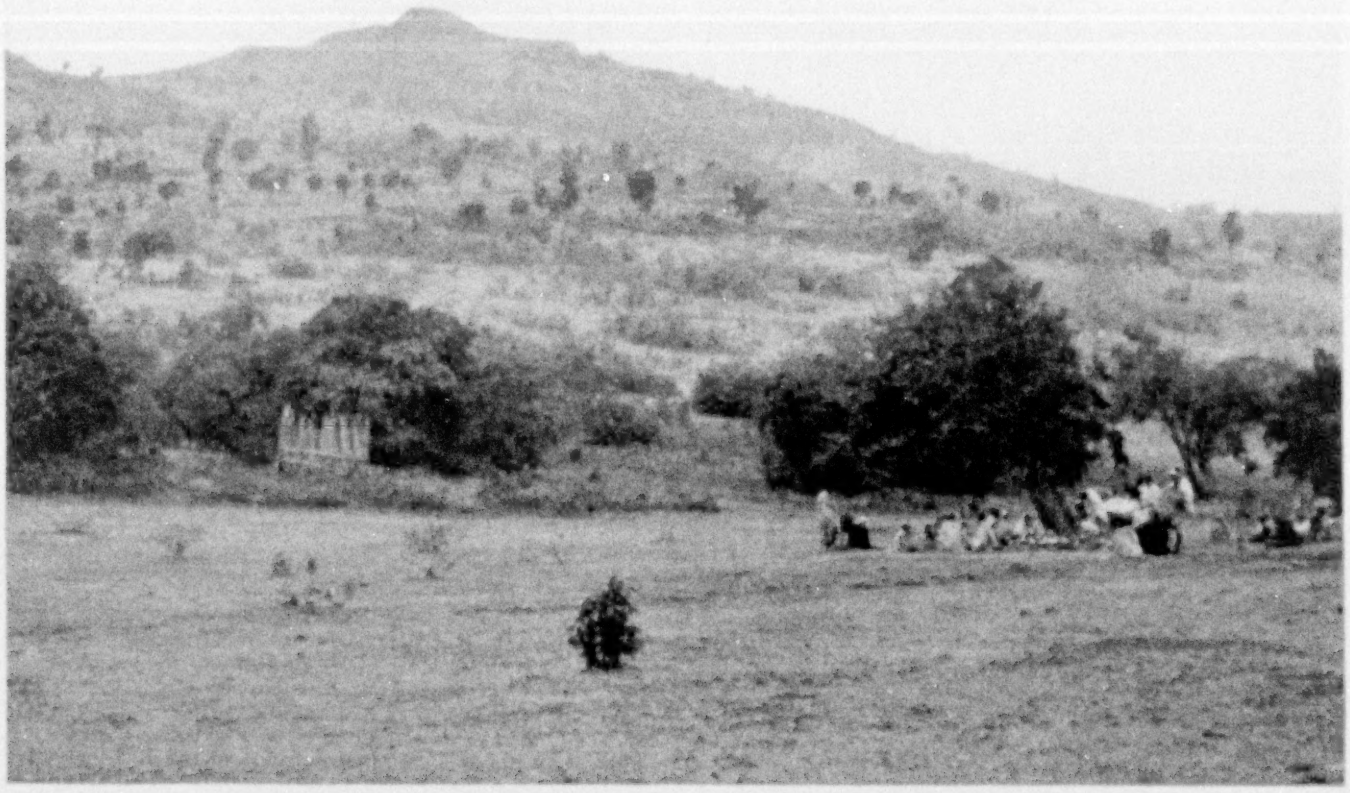
VEGETATION AT AN ELEVATION OF 14,000 FEET, SIMYEN MOUNTAINS: GIANT LOBELIAS IN FOREGROUND

The rim of the canyon is formed by perpendicular walls of reddish basalt which are so nearly continuous that ingress and egress are possible only at long intervals, well known points which have been used for centuries.

The canyon drops abruptly from the grass-grown level of the plateau, and we scarcely had a preliminary view of it before we stood on its very edge. Then it was magnificent, and as we laboriously descended, new vistas unfolded at every turn.

The trail is rough, rocky, and in places very steep—a hard trail for tired mules, but not a dangerous one. Fortunately, there is one small spring of water about halfway down the south wall, and another near the foot of the upper escarpment on the north. This makes it possible to arrange the crossing in three days, which is about all that mules and men can endure.

The first day took us halfway down the south side; the second day we reached the river, forded it, and climbed part way out; and the third we finished the grueling climb to the north rim. Here the aneroid again read 8,100 feet, practically the same as on the south side. At the river the



AT THE SOURCE OF THE BLUE NILE

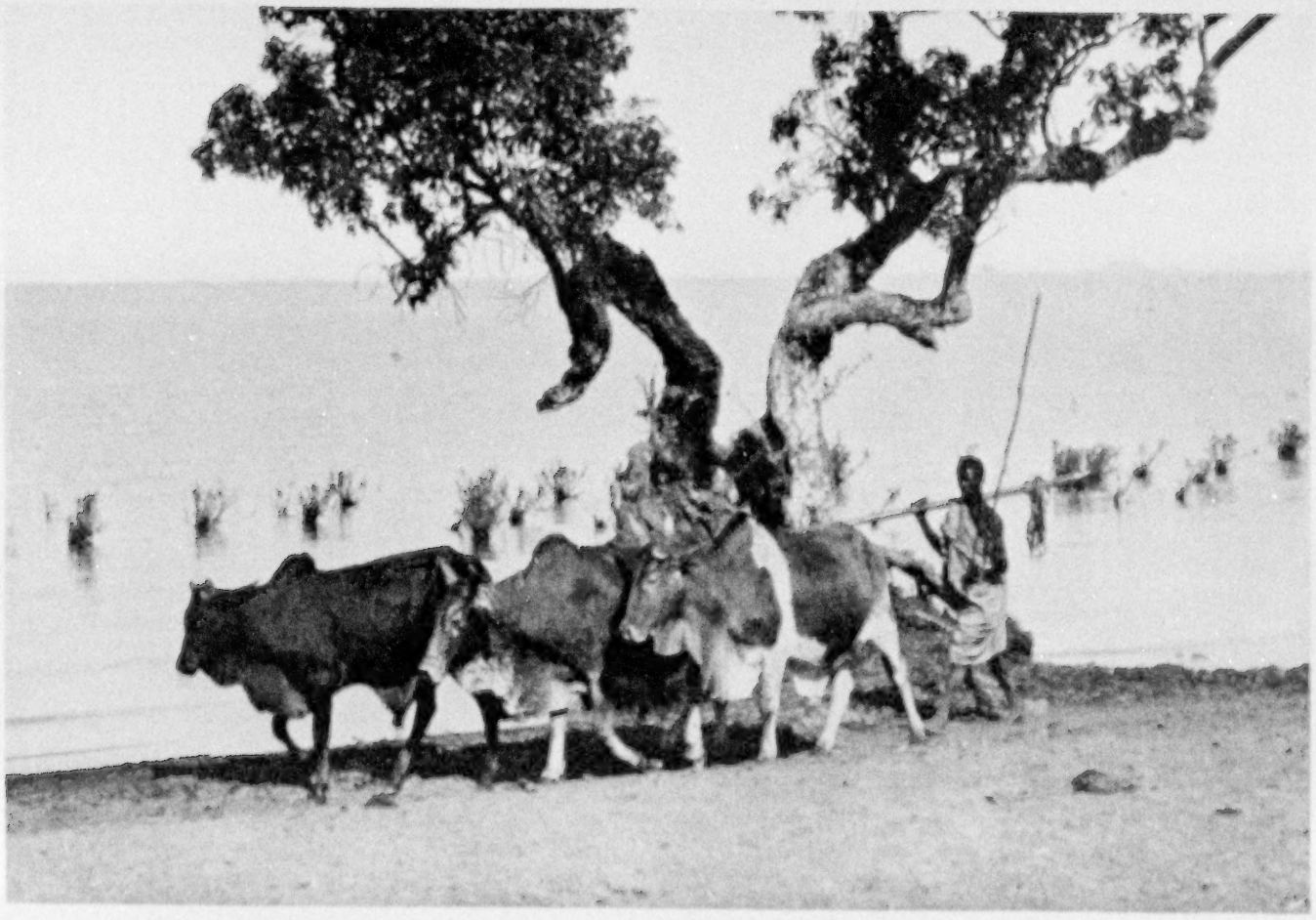
The little stockade near the left center of the picture surrounds the spring which is the actual source of the eastern branch of the great Nile. The natives regard it as a holy place (see text, page 170). The group to the right has come on a long pilgrimage to it.

A SUBSTITUTE FOR A BLAZED TRAIL, NEAR THE SUDAN BORDER

The trees are knotted when small and continue to grow, thus furnishing a very effective means of marking little-used paths.

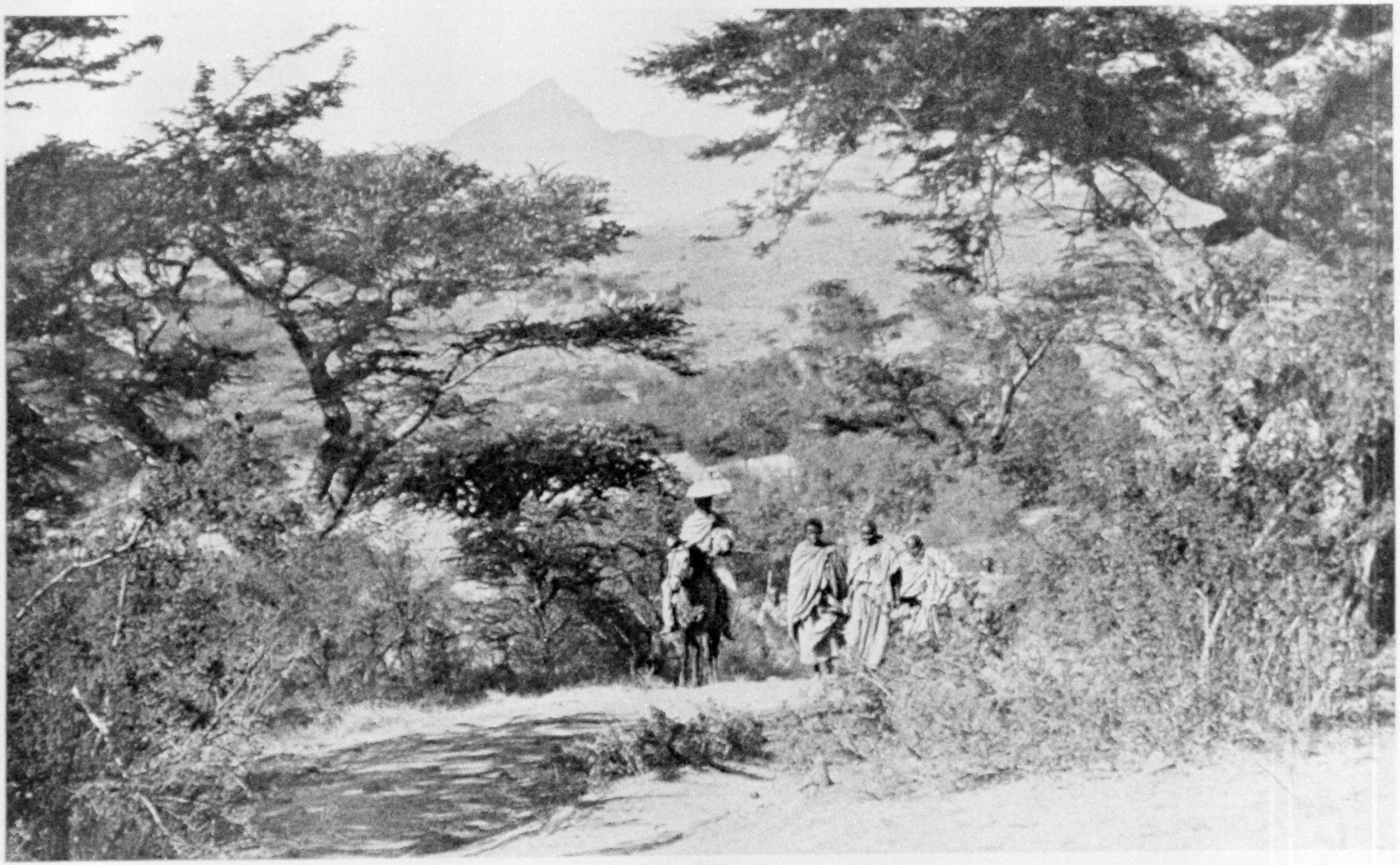
FISHERMEN ON LAKE TSANA

Their boats of reeds resemble the Indian *balsa* craft seen on Lake Titicaca, in South America (see "The Heart of Aymará Land, in the Bolivian Highlands," by Stewart E. McMillin, in the NATIONAL GEOGRAPHIC MAGAZINE for February, 1927).



ON THE SHORES OF ETHIOPIA'S LARGEST LAKE

The natives about Lake Tsana have large herds of fine humped cattle. The country is low on the east and west sides, but rises abruptly to the north.



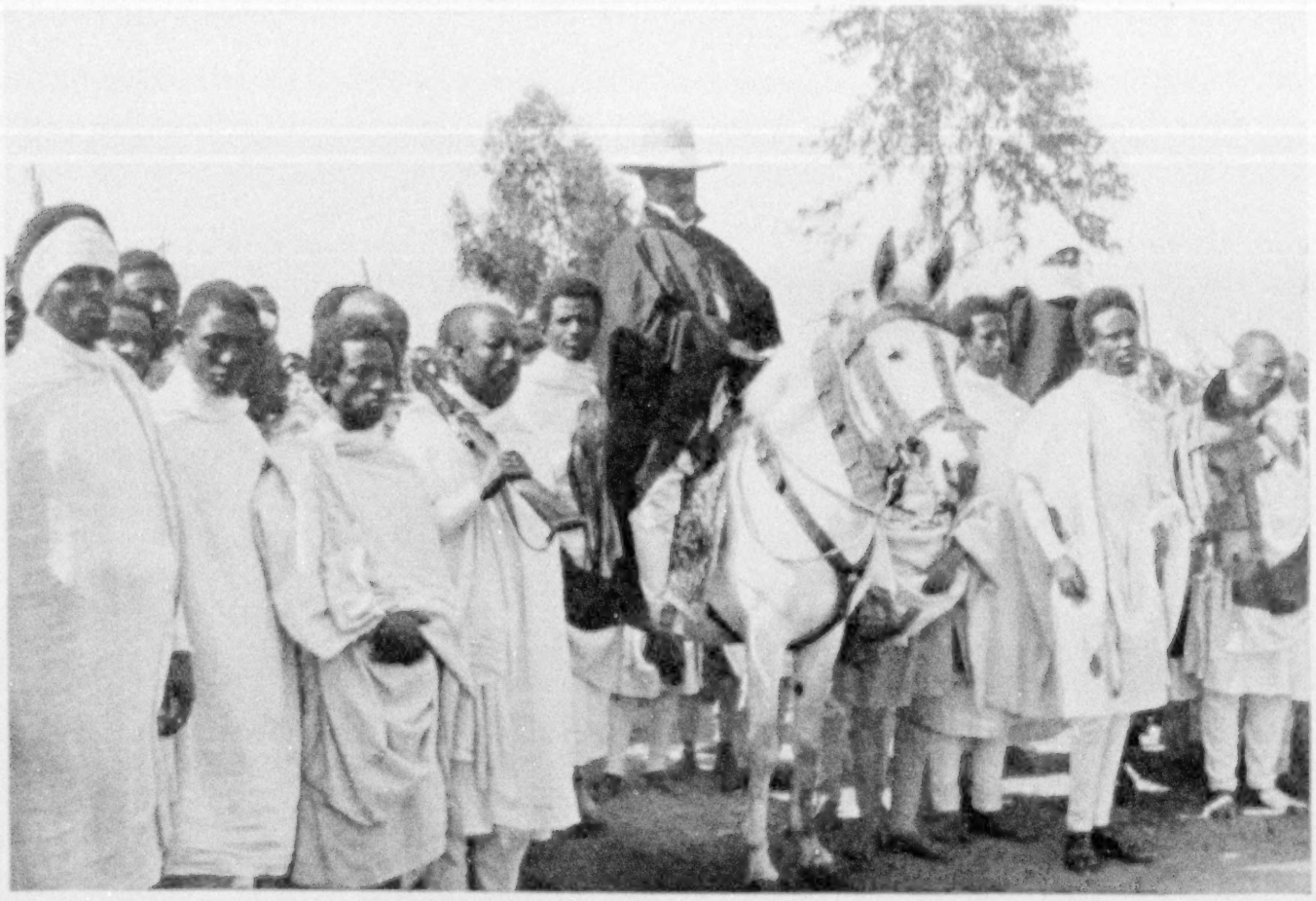
A GENTLEMAN'S RETINUE ON THE SIMYEN PLATEAU

As the caravan wound along the trails of the Simyen Plateau country people on their way to market were often encountered. The high-class gentlemen rode upon mules or horses, often shading themselves with small umbrellas woven from grasses, while women and men servants followed along on foot. Beautiful vistas unfold while winding through this parklike country, and the most imposing landmark of all the plateau is a triangular peak the summit of which is some 10,000 feet above sea level.

XUM

A RECEPTION COMMITTEE OF 500 WELCOMES THE EXPEDITION TO THE DOMAIN OF RAS HAILU

A messenger bearing a note of invitation from the chieftain had preceded the guard of honor (see text, page 170).



RAS HAILU MOUNTED ON THE FINEST MULE IN ETHIOPIA

This famous chieftain, second only to Ras Taffari in power, is surrounded by his personal bodyguard. Such a gaily caparisoned animal commands a very high price in Ethiopia.

reading was 3,100 feet, so the depth of the canyon at this point is almost exactly 5,000 feet.

The region inside the canyon is practically uninhabited and largely unexplored. The crossing place is reputed to be favorite ground for bandits, but we saw none.

HEADWATERS OF THE BLUE NILE

The Blue Nile in this section makes a big bend and, although the point where we crossed is many miles from its source by the windings of the river, we were able to cut across this bend and in a relatively short time reach its ultimate headwaters at Gish Abbai, near Sakalla, in the mountains of central Gojjam. Here a small spring rises in a mountain meadow at an elevation of about 9,000 feet.

A trickling rivulet runs thence through open dales, soon to be joined by others to form the stream called the Little Abbai, which British engineers have authoritatively determined as the true source of the Blue Nile (see page 166).

This stream runs into and through the lower end of Lake Tsana, emerging with other waters of the lake to form the main Abbai, or Blue Nile proper. The spring at the source is regarded by the natives as a holy place and its water is a sort of Jordan to them. They have erected a light stockade around it and make pilgrimages to it from distant points.

A number of natives were here when we arrived, and for several days they were coming and going or sitting about with their water jars conducting simple devotions.

Mr. Fuertes and I began to get some of the romance of the situation, and at meal time would amuse ourselves by lifting our glasses and apostrophizing the great river, or, as we passed the stream, would drop chips into it with foolish remarks about meeting them again in Khartum or Cairo. However, for domestic purposes, we took the precaution to have the water boiled, here as elsewhere.

MAGNIFICENT RECEPTION BY RAS HAILU

On the north bank of the Blue Nile we entered the important province of Gojjam, rich realm of the famous chieftain Ras Hailu, second in wealth and power to Ras Taffari, but occupying an isolated terri-

YOUNG ETHIOPIANS OF HIGH DEGREE

Ras Hailu has surrounded himself with a group of young men who act as his bodyguard. They are excellent horsemen and delight in exhibiting their prowess in the saddle. Every youth is a potential soldier and they thoroughly enjoy playing at games of war.

tory as yet little affected by modern influences.

We had sent word of our approach, and when we reached his borders an emissary was there to welcome and guide us.

The messenger presented us with a quaint little note written by Ras Hailu himself and stamped with his ornate seal. In effect, this gave thanks to God for his state of good health, hoped we were the same, and bade us come at once to see him. We had expected to find him at his long-established capital at Debra Markos, but he was temporarily quartered at the village of Bichana, birthplace of his father, Tecla Haimanot, which, largely for sentimental reasons, he was rebuilding and enlarging, perhaps with the idea of making a new capital.

For three days we proceeded toward this place. Suddenly, without warning, as we topped a rise in the trail, we confronted a company of 500 men drawn up in orderly array to meet us—a sort of guard of honor led by a handsome chamberlain (see page 169).

After we had dismounted and exchanged greetings, we were invited to proceed toward the village.

The spot was very picturesque, situated on a high ridge looking down over sweeping slopes to the broken side canyons of the Blue Nile on one side and up to the cloud-capped peaks of central Gojjam on

A RAW-MEAT FEAST

Steers are slaughtered for such an occasion and the meat is served on large wooden platters. The feasters cut off small pieces and eat them with bread (see text, page 176).

the other. A band of 20 slaves playing weird music started the march, and our enormous escort fell in on either side. Our own boys proudly formed in a square behind us, the caravan of mules and attendants trailed in the rear, and we rode on like heroes returning from battle.

The march ended at the outskirts of the village, where a campsite had been set aside and a large ornamental Arab tent, its floor laid with rich oriental rugs, had been pitched for us.

INTIMATE RELATIONS WITH RAS HAILU

The next day, when we met the chief, he amply justified his royal welcome and all that we had heard about him. Thereafter, for ten days, his strong, vivid personality monopolized our attention. Our work of collecting specimens was halted and all ideas of proceeding on our way had to be abandoned until he saw fit to release us. Each day he came to visit our camp and each day he provided entertainment and hospitality for us in the village.

The first invitation was to luncheon, and we rode up to our host's compound accompanied by a goodly escort of our own boys, who were much spruced up for the occasion. At the gate was a small guard of men in spotless white, with rifles on their shoulders, and as we entered the outer inclosure several hundred more rose and stood at attention in long lines through which we passed to the inner gate.

Here we dismounted and were met by Ras Hailu, who came forward smiling and surrounded by special attendants and dignitaries. At the luncheon these notables and several of our more important "boys" stood within call, but only Ras Hailu sat at table with us.

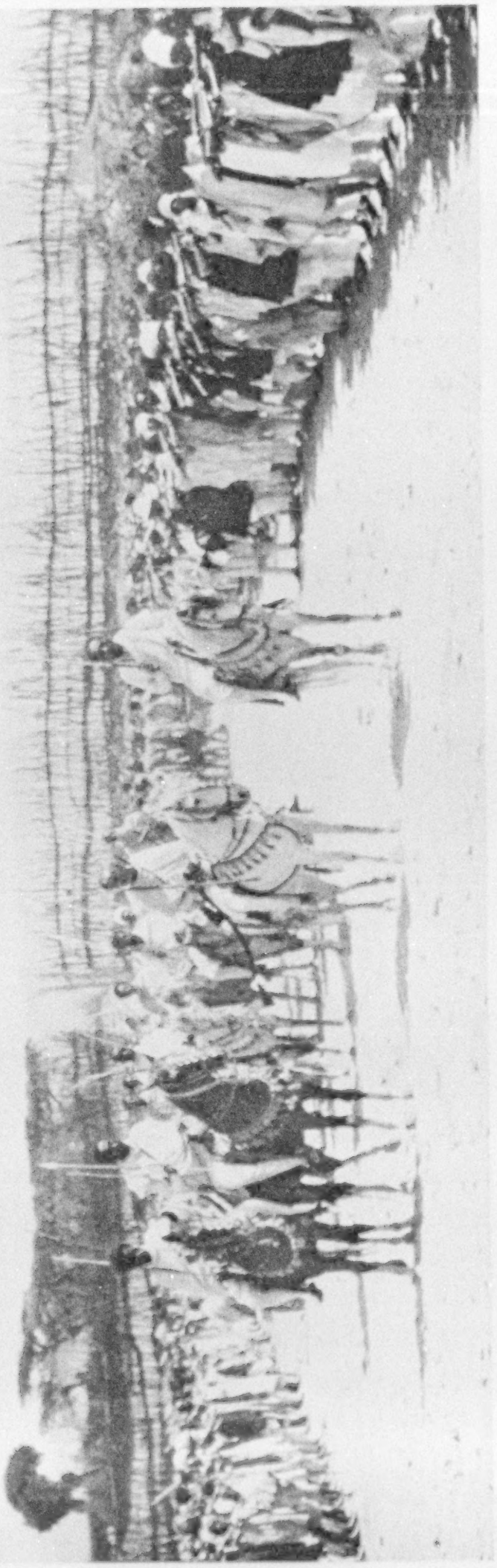
There were fifteen courses, mainly meat in various forms, the most acceptable being good fried chicken. Native beer and tej were served lavishly and continuously and there was also champagne, and finally cognac and native coffee.

The next day a return engagement was arranged, and the Ras readily accepted an invitation to dine at our camp. Our cooks and attendants outdid themselves, and the entertainment was carried off with great success.

This sort of thing was kept up and we sat for hours at table, conversation never

THE ENTRANCE TO AYALU'S COMPOUND

Dejazmatch Ayalu, the ruler of much of northern Ethiopia, made his home upon a high hill. About his dwelling place he had erected a formidable stockade, which, with the aid of a few machine guns, would discourage any attack by native forces.



ETHIOPIANS ARMED WITH SPEARS AND ANCIENT MUSKETS WELCOME THE EXPEDITION AT AYALU'S COMPOUND (SEE, ALSO, PAGE 173)

Spearmen on beautiful horses, with harness ornamented with gold and silver, escorted Baum, Bailey, and Cutting to the stronghold of Dejazmatch Ayalu, the chieftain of the Simyen district. The mounted men performed feats of horsemanship to show the "Ferengies" their skill in the saddle. One form of amusement is for a rider to pursue another at breakneck speed and hurl a spear at him. The latter turns in his saddle, catches the spear, and, whirling his horse, takes up the chase, becoming the pursuer rather than the pursued.

lagging and subjects ranging from international relations to cures for sore-backed mules. Although the chief is a large, ponderous man with rather heavy features, he has an engaging smile and a certain indefinable charm that we could not fail to recognize. He has a decided sense of humor, is fond of a good story, and his comments on human nature were usually pithy and sometimes quite epigrammatic. We were the first Americans to pass his way, and it was evident he wished to stand well in our estimation.

We realized that we were important mainly as representatives of a great nation, but he was shrewd enough not to refer to this and made his compliments delicately and personally to us as individuals. He did not neglect the men of our caravan, men from Addis Ababa, where he has many admirers.

A RAW-MEAT FEAST

One of the most interesting incidents of our stay with Ras Hailu was a great guebeur, the pre-Lenten raw-meat feast of Kurbella. Owing to the chief's temporary quarters, this was held in a large tent, in camp-meeting style (see illustration, page 172). It lasted for some hours and required various sittings to accommodate the different classes of people. Practically the entire male population was served, even including prisoners under sentence for minor offenses.

THE EXPEDITION'S CARAVAN CROSSING THE BLUE NILE AT THE BOTTOM OF A CANYON 5,000 FEET DEEP

This canyon, much of which is unexplored, extends for many miles and during a great part of the year is impassable (see text, page 165).

The feast was far from being an orgy. It was conducted in a very orderly manner. Long tables and benches supported by wicker cylinders were closely arranged, and the groups of men filed in and took their places with great solemnity. Steers had been slaughtered near by and the meat was brought in on large wooden platters and passed about to the feasters, who cut it in small pieces with slender steel knives and ate it deliberately with bread and drink. The flesh was in red, quivering chunks of about a half pound each and was consumed without any wolfing or tearing.

We, ourselves, sat on a dais at a special table with the Ras, where we were served with special food and drink. Raw meat was offered us, but not urged upon us, as was the case with other native food.

As the feasters filed out, some of the older men stopped in front of our table and made short, impassioned speeches addressed to their chief, extolling him and expressing good wishes to us, his guests. Finally, there was music and dancing and some rather rough pantomime by a band of slaves, and the affair broke up with laughter and good feeling.

The eating of raw meat seems to have no particular significance and is said to have had its origin during intertribal wars, when camps without fires were necessary.

IBEX HUNTING IN THE SIMYEN MOUNTAINS

Around the famous Lake Tsana our party was divided, one going to the south and west and the other to the north and east via the old settlement of Gondar, where there are interesting ruins of stone buildings erected by Portuguese adventurers (see pages 159 and 160).

The Gondar party, composed of Baum, Bailey, and Cutting, went northeast to the Simyen Mountains, the highest group in Ethiopia, reaching an extreme elevation of more than 15,000 feet. Its main object was to hunt the Abyssinian ibex, a rare animal, found only in these mountains.

The chief of Simyen, Dejazmatch Ayalu, received the party cordially, and, although he is not reputed to be so rich or powerful as Ras Hailu, he almost outdid him in his demonstrations. Without his friendly cooperation nothing would have been possible, since the ibexes and the cliffs they inhabit are his personal preserve.

Ibex hunting in any part of the world is back-breaking work, usually exciting, and often dangerous. In the Simyens our hunters found it everything it was reputed to be and even more. The mountains were exceedingly precipitous, and if it had not been for willing native guides who went up and down the dizzy pinnacles, clinging with bare feet like flies to a wall, the results might have been disappointing. As it was, a fine series of specimens was obtained, the first ever to fall to American rifles and the first ever to be brought to an American museum.

Mr. Bailey had one experience which he will not soon forget. In brief, he shot and instantly killed an ibex as it ran directly above him. Its dead body, accompanied by loose débris, fell toward him, passing within a few feet as he crouched on his narrow ledge, and then crashed on down for 2,000 feet more. It was only a matter of inches as to whether or not the quarry would carry the hunter with it.

THE END OF THE TRAIL

Early in April the two sections of the party, following converging trails, suddenly and somewhat unexpectedly came together on the Gandwa River, a few days' march from Gallabat, on the Sudan border. It was a joyous meeting, with much good fellowship and rapid interchange of experiences; but almost immediately a spell of some sort seemed to prevail, as each man realized that a wonderfully interesting trip was virtually over.

At Gallabat two English officers welcomed us cordially, and their efficient establishments proclaimed that we were at the great world's door; yet we could scarcely believe it. Wires were sent to wives in Paris, and answers came back the next day. It didn't seem possible.

All that remained of Ethiopia was represented by our simple-hearted and mostly faithful men. A few days later automobiles, ordered by telephone, came from Gedaref and bore us and our baggage, for two blistering hot days, to Wad Medani, only a few hours by rail from Khartum and a well-appointed tourist hotel.

THE BALEARICS, ISLAND SISTERS OF THE MEDITERRANEAN

By Roy W. Baker

American Consul at Barcelona

IT IS doubtful if there is in the world's geographic photograph album a family group whose members show as little family resemblance as do those of the Balearics, that constellation of shining islands of the Mediterranean just off the mainland of Spain.

Majorca, the big sister, so well known to the world,* sits in the center, radiantly beautiful, a trifle too beautiful, it seems—full-lipped and full-breasted, with a slightly self-conscious smile and a trace of paint and rouge on cheeks and lips. Minorca, slight and delicate, a country maiden beyond all doubt, yet with a grace that suggests a certain knowledge of the world, sits at her side.

EACH ISLAND REVEALS ITS PERSONALITY AT ONCE TO THE TRAVELER

While Majorca is manifestly a daughter of Spain, Minorca's features and person partake of the north—a strange mixture of English and possibly a little Dutch with the Spanish. Well groomed and almost up-to-date, she looks at the observer with a pleasant but slightly reserved smile, and it is evident that she is a person of poise and self-respect.

On the big sister's other hand, Iviza, a charming peasant in bright apron, skirt, and shawl, hung with barbaric jewelry, piques the interest of the genealogist, for in her a different strain, probably Arabic, seems to predominate. She gazes out of the picture with level, quiet eyes that are a bit mysterious and disconcerting. Her face is unsmiling, even slightly smudgy, but still peculiarly attractive. At her feet is Formentera Island, one of the two babies, almost Iviza's counterpart in face and dress.

It seems unkind to draw attention to Cabrera, the other baby, crouched at Majorca's feet, for she is a spare, pathetic little figure, maltreated since birth. In her plain face are to be read the signs of misery.

* See "Keeping House in Majorca," by Phœbe Binney Harnden, in the National Geographic Magazine for April, 1924.

Such are the sister islands, and their description fits their people. The islanders are the pleasantest of folk to visit—simple-hearted, even-tempered, sober-minded, honest, and kindly.

The welcome accorded the traveler in the Balearics differs according to the island. Majorca greets the stranger with easy familiarity, for she has known many tourists in the last few years; Minorca with quiet grace; and Iviza shyly; but the warmth of the welcome is never in doubt. Ask a passer-by to indicate the direction to a store or hotel; you will be escorted to the door and bowed in, and generally you must not offer anything more material than thanks in return.

At Ciudadela, Minorca, I strolled into the town's only men's club in search of food, thinking it a café, and at the invitation of a member, who realized my mistake, I stayed until 2 o'clock in the morning talking with an interested and courteous group of the town's landed gentry, which is to say, principally proprietors of shoe factories.

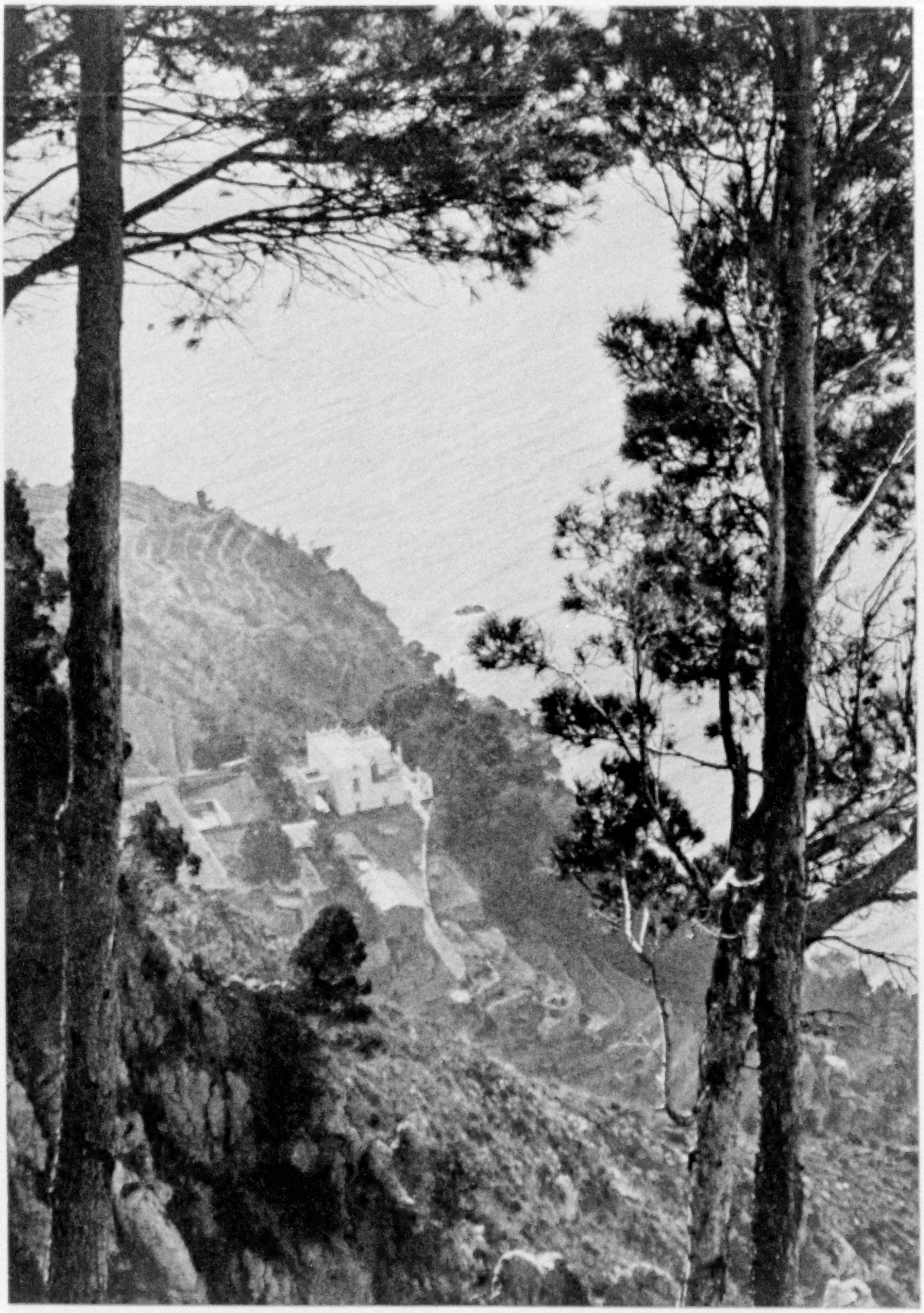
Much of this story was written in the Casino de Iviza, the club supported by the men folk of the tiny capital of the island of Iviza. Reticent Iviza did not take me to its heart as did Ciudadela, but I was made to feel entirely welcome.

I suggested to the proprietor of the inn where I stayed that I be allowed to pay the club dues (2 pesetas, or 35 cents, a month!), but was told that any attempt to pay more than the ridiculously small price of the good coffee and the other good things I consumed would be resented.

At Mahón, Minorca, two cultured gentlemen, officials of the city, left their work to show me the things worth seeing, and to search for data for me.

MAHÓN TO BE ONE OF THE INLAND SEA'S FINEST HARBORS

The ideal Balearic climate contributes enormously to the traveler's comfort, and, in contrast to what one often experiences



Photograph by Truyol

RARE MIRAMAR, RETREAT FOR MONK AND NOBLE

Here, in a seagirt and crag-topped solitude, Ramón Lull taught Arabic and alternated the writing of poetry with abstruse theology, in his famous school for the training of missionaries. Centuries later the Archduke Ludwig Salvator of Austria settled on it. He laid out a garden, built roads and paths, reconstructed the house on the site of the former school, and filled it with old Majorcan furniture and majolica ware (see, also, text, page 199, and Color Plate XIII).

on the Continent, it was a gratifying surprise to find the *fondas*, or inns, invariably clean and their meals wholesome.

One of the outstanding features of the Balearic group is the abundance and excellence of its harbors. Mahón, the principal city of Minorca, is an example. One's ship picks its way down a long water lane, through pink and gray shores capped with rolling green, into what the Spanish Government plans to make one of the finest harbors in the Mediterranean.

Ever since Mago, the brother of Hannibal, wintered in this harbor (which still bears his name, Portus Magonis, now corrupted to Mahón), it has been famed as a refuge for ships, and its usefulness will be greatly increased when the Island of the Rats, a small knob of rock in the center of the basin, is removed.

Past the ruins of San Felipe Castle, the scene of many hard-fought battles in Minorca's stormy history, past the Island of the Rats, there ahead, on the highest and greenest crest, one glimpses San Antonio, the seat of the noble Vigo family.

The islanders tell proudly how in 1798 Lord Nelson, during the war with France, came into Mahón with his squadron, seized the mansion that overlooked the port where his ships rode, and installed the lovely Lady Hamilton. But the town's historians smile rather sadly and admit that, while history is replete with incidents of Nelson's visit, it does not bear out the story of Lady Hamilton.

And then, Mahón! That is the way it comes. Suddenly, as the vessel rounds a point, it bursts into view, a quick splash of pink and white on the hillside, tier after tier of quaint streets, splendid in the sunshine (see, also, Color Plate I).

Mahón sparkles, as does the whole island. It is a maze of spotless up-and-down-hill streets of shining dolls' houses, and it is difficult to believe that this is a part of Spain, where streets, if generally picturesque, are seldom or never clean. But therein lies hidden a tale.

MAHÓN'S JOKE ON THE VISITOR

From the steamer's deck the town, terrace upon terrace of white houses, with the spires of the inevitable churches dominating the mass, appears pure Spanish; but that is just Mahón's little joke on the visitor, for many of the houses show English features peering out from under their Spanish sombreros.

Drawn by James M. Darley

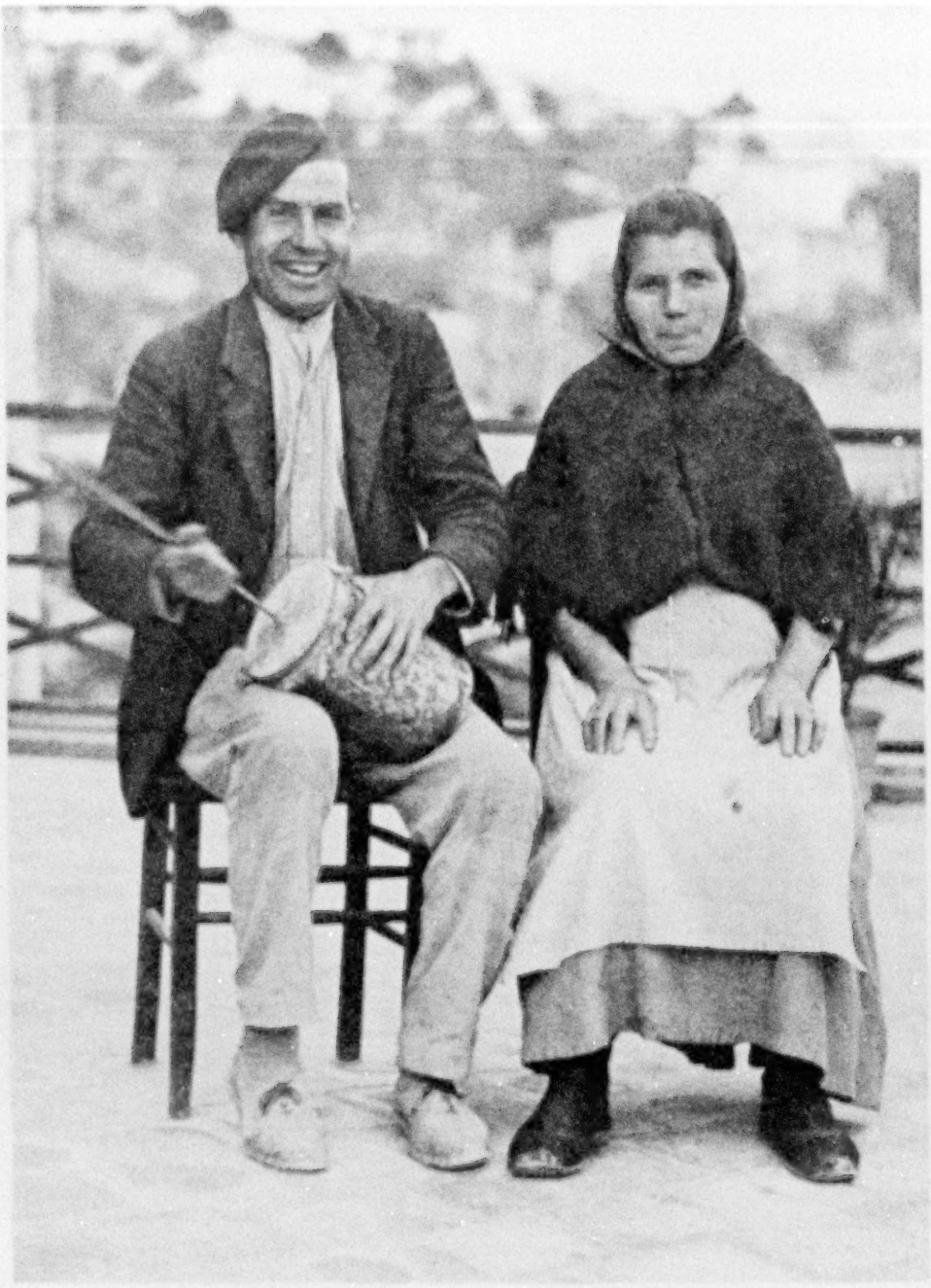
THE BALEARIC ISLANDS

With 1,935 square miles, the five Balearics have an area equal to the land area of Delaware, and a third more inhabitants than that State.

The impress of the English occupations is still strong. An indefinable something suggestive of the English provincial town is reflected from the green doors, their shining brass fixtures and square-paned windows with white woodwork, which, also contrary to the rule in Spain, for the most part remain unshuttered during the daytime.

This mixture of the English and Spanish gives Mahón a character of its own, which is shared by its people. It is the women who refuse to conform. In continental Spain and in the other islands they take their places in the fields with the men and the beasts of burden. Not so with upstanding Miss Minorca! She believes that "woman's place is in the home" or possibly, as a concession to the march of the times, in the factory, but not in the field, and there she refuses to go.

Quite as remarkable, the *alpargata*, the rope-soled canvas sandal of Spain and the rest of the Balearics, is practically extinct here. Whether it is that Minorca, producing a large proportion of the fine shoes sold in Spain, excludes this humble



Photograph by L. F. Hurlong

MAKING MUSIC IN MAJORCA

The zombomba is an instrument made from a tin can, a stretched rabbit skin, and a bit of bamboo. In order to produce a note, the player wets his palm with sputum and rubs his hand up and down the bamboo rod, producing a sound that may be made by the lower tones of the cello. This instrument is played mostly during carnival season and the night before Christmas. It is also used to serenade a newly wedded pair when the couple consists of a widow and a bachelor or a widower and a maid.

footwear from a feeling of local pride, or whatever the reason, the fact remains that Minorca wears shoes.

PREHISTORIC PEOPLES LEFT THEIR IMPRINT ON THE BALEARICS

The Balearics are rich in relics, from the days of the prehistoric inhabitants of the Mediterranean countries on down to modern times. Castles, churches, palaces, forts, and watchtowers are seen so frequently that they become almost matters of course. In Minorca there are still standing more than 200 of the *talayots, taulas,* and *naus*—stone structures generally supposed to have been used in connection with prehistoric religious ceremonials and the burial of the dead—and the cliffs and mountains are literally honeycombed with caves.

Within twenty minutes' walk of Mahón there is a fairly well-preserved talayot, a truncated cone of huge stones, probably 40 feet in diameter and 25 feet in height, with a large taula near by. Surrounding the talayot, and marking another age in Minorcan history, are the walls of a fort built probably of the stones of the talayot.

The surrounding fields are strewn with fragments of pottery from prehistoric times on down through the Phœnician, Grecian, Roman, and Arabic occupations, and the high stone walls over which one scrambles to reach the charmed hilltop are capped with other fragments laboriously picked from the fields by the island farmers (see, also, opposite page).

On my first afternoon on this island my companion, a Mahón attorney, and I started out in an antiquated automobile and drove along the wind-swept northern shore toward the tiny fishing village of Fornells. A fine highroad ran through a country of rare beauty, which unrolled toward the coast in a succession of hills, some unkempt, some groomed to the point of dandyism, on which an ever-changing pattern was traced by Minorca's character-

istic whitewashed rock fences. The farmhouses, long, low, and white, with sudden ramifications here and there, constituted a lesson in the harmony of mass, of line, angle, and curve.

I have said that we started out with Fornells, a fishing village, as our destination. On the day of this visit Fornells probably would have claimed to be "the fishin'-est village." Our arrival was simultaneous with that of a small boat, which bore into port the biggest fish, we were told, the town had ever seen. It measured more than 16 feet from snout to tip of tail.

The whole town, headed by the village priest, had gathered on the tiny quay to gaze at the monster, congratulate his captors, and to speculate, for in all its fishing history Fornells had never seen the like of this fish; its species was a mystery. We left the natives cutting the fish into sizes convenient for transportation to the market at Mahón, and chattering excitedly.

Photograph by L. F. Hurlong

ROMAN VASE BROUGHT UP IN THE NET OF A DEEP-SEA FISHERMAN OF IVIZA

Often the natives do not realize the value of such finds and many have found their way into the homes of private individuals.

COVE CAVES PROVIDE A THRILL

The deepest thrill for the visitor to Minorca is to be found in its prehistoric caves. A talayot, taula, or nau is an awe-inspiring sight when one realizes what it stands for, but it has not the instantaneous effect on the imagination made by one of those cave homes of no one knows how many years ago.

The Calas Covas, or Cove Caves, comprise a group in one of the many coves that indent the Minorcan shore, and certainly a better location from a dramatic standpoint could not have been selected by the cavemen. The cove is a wild, winding gash in the shore, descending sharply from the interior tableland to the sea.

The approach to the caves is along a narrow path hedged by a matted scrub growth and by fragments of the cove walls, which during the ages have become dislodged and have crashed to the valley.

At the water level these walls are high, jagged, and precipitous; the sea beats and snaps at them and the place itself compels awe. Wild deeds are plainly indicated. Add, then, to all this the effect of some forty black apertures extending

from the water line to the tops of the cliffs—all made by man when the human forehead was lower and human life more precarious than it is now.

It is a meager imagination, indeed, that does not immediately people the cove with small, active men, wide between the cheek-bones and as agile as monkeys. We can conjure up the picture and see them leaping among the crags to their eerie homes, chattering and bickering and certainly ready to make it most unpleasant for foreign invaders such as ourselves.

I longed to explore each separate cave in the hope of finding some reminder of those dim times in the form of a crude weapon, utensil, or tool, such as I had seen in the collection of my companion, a recognized authority on the prehistoric remains; but we had come unprepared to reach any but the lower recesses. Leather soles afford too insecure a footing to reach even those of the middle tier, while those high in the rock must be approached from above by means of rope and tackle.

The arched roof of the typical cave dwelling is sufficiently lofty to permit a man of average height to stand upright beneath its highest point, its embryonic columns or supports extending from the walls at intervals. These are large at the point of juncture with the ceiling and taper toward the floor, giving the impression of a partition dividing the cave into two or more chambers.

In some caves there are several chambers and even indications that there were two floors. Practically all these rock abodes had two entrances. With a foe entering by one door, it was convenient to have an unobstructed exit!

One of the surprises of Minorca is the sudden change of character in the short ride along the mountainous spine that connects Mahón with Ciudadela at the western end of the island.

One leaves Mahón spotless, white, English-Spanish in character, and unexpectedly rolls into a Spanish-Moorish Ciudadela, somnolent in brilliant sunshine, gaudy in red, blue, pink, and green houses, dusty and dry, slightly down at the heel and not concerned about it, with no very definite plan for the next moment and not anxious to make one. Its claims to distinction are: Minorca's only cathedral, one of the finest naus in the island, and half a dozen house fronts and street corners worthy to be set in platinum.

The peaks of Majorca are plainly visible across the channel, and when I sailed for Alcudia in a toy steamer, there were among my traveling companions five cows, a pony, four crates of chickens, and fifty sheep, all protesting loudly against the voyage, which was far from tranquil. In the emission of horrendous groans a seasick sheep has no competitor.

PALMA IS WELL AWARE OF ITS CHARMS

Palma, the principal city of Majorca, is snugly situated at the central point of a magnificent horseshoe bay. Like all the other waters of these remarkable islands, the Bay of Palma could supply half the colors of an artist's palette.

The left-hand prong of the horseshoe shore, as one steams toward the city, was the scene of the first fighting between Don Jaime I, the Conqueror, and the defending Moors in 1229 A. D., and it is on this prong that Palma's fashionable tourist section has sprung up, with stately Bellver Castle, built by Jaime II, overlooking it from the top of a handsome wooded hill (see Color Plate III).

The remains of the old city wall, the *Lonja*, or Exchange, and the Cathedral, all architectural gems, are just ahead on the water front, and from the gaily colored bulk of the city project the spires of a number of churches, landmarks in history.

Palma itself is a country village of 100,000 people and of considerable commercial importance. Some years ago it awakened to the realization that it had natural endowments in the form of great scenic beauty, perfect climate, and historic interest that assured it a place in the sun if properly exploited. It heard the clink of gold in the tourist's pocket and, rubbing the sleep from its eyes, stepped forth to attract travelers.

This is said in no spirit of disparagement; the island was born to be opulent, as hundreds of thousands will testify. Handsome hotels have sprung up; public service is furnished; roads are being improved; automobile registrations are well up in the thousands; there are cinemas, theaters, and concerts, and Palma is even talking of a golf course.

There are points of interest almost

THE PORT OF IVIZA AT PEEP OF DAY

The metropolis of the island of Iviza is most alluring at a distance when its pure-white buildings shine like jewels against the green and blue of field and sky. This photograph was made in early morning before the daily summer wind had begun to blow.

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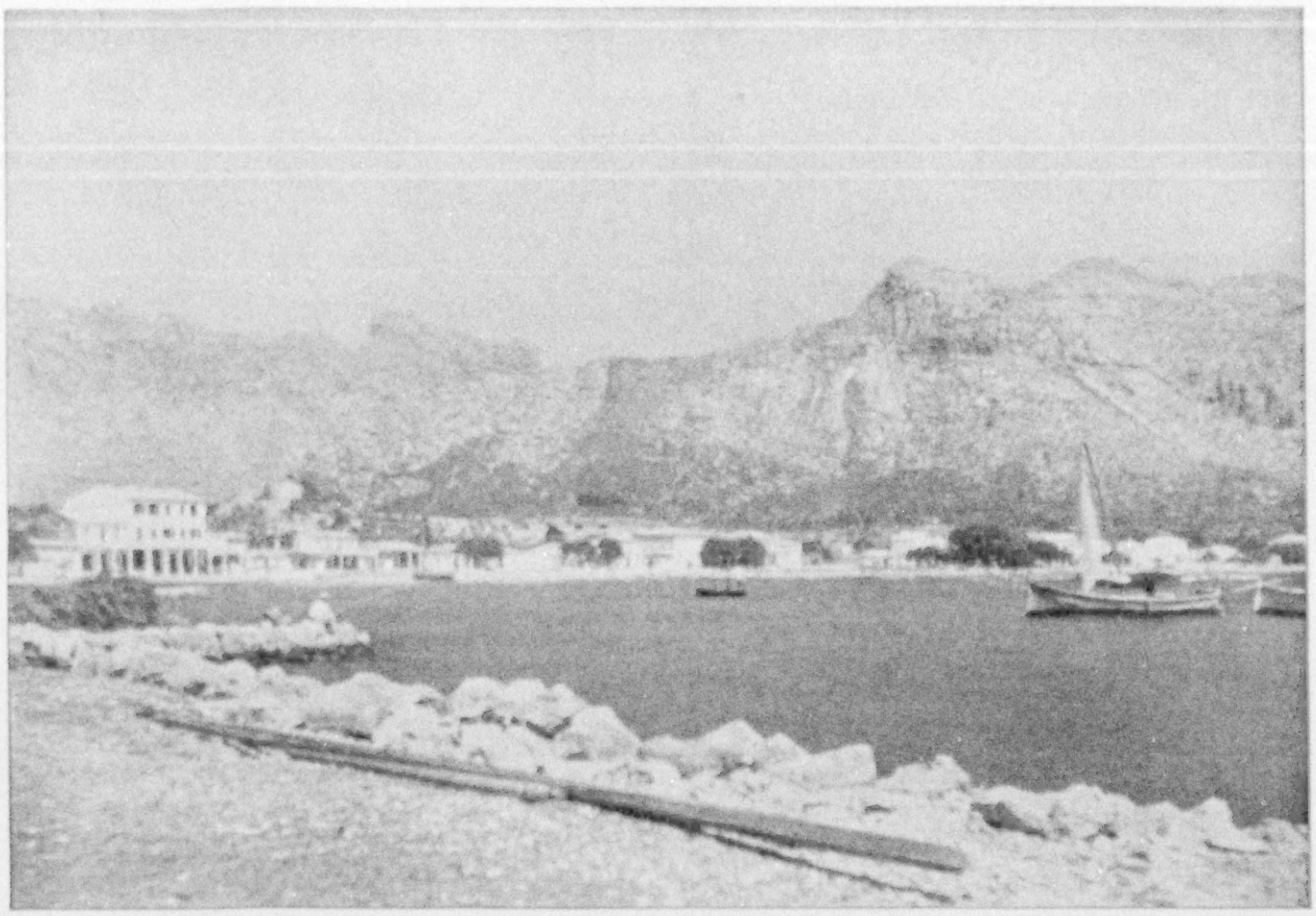
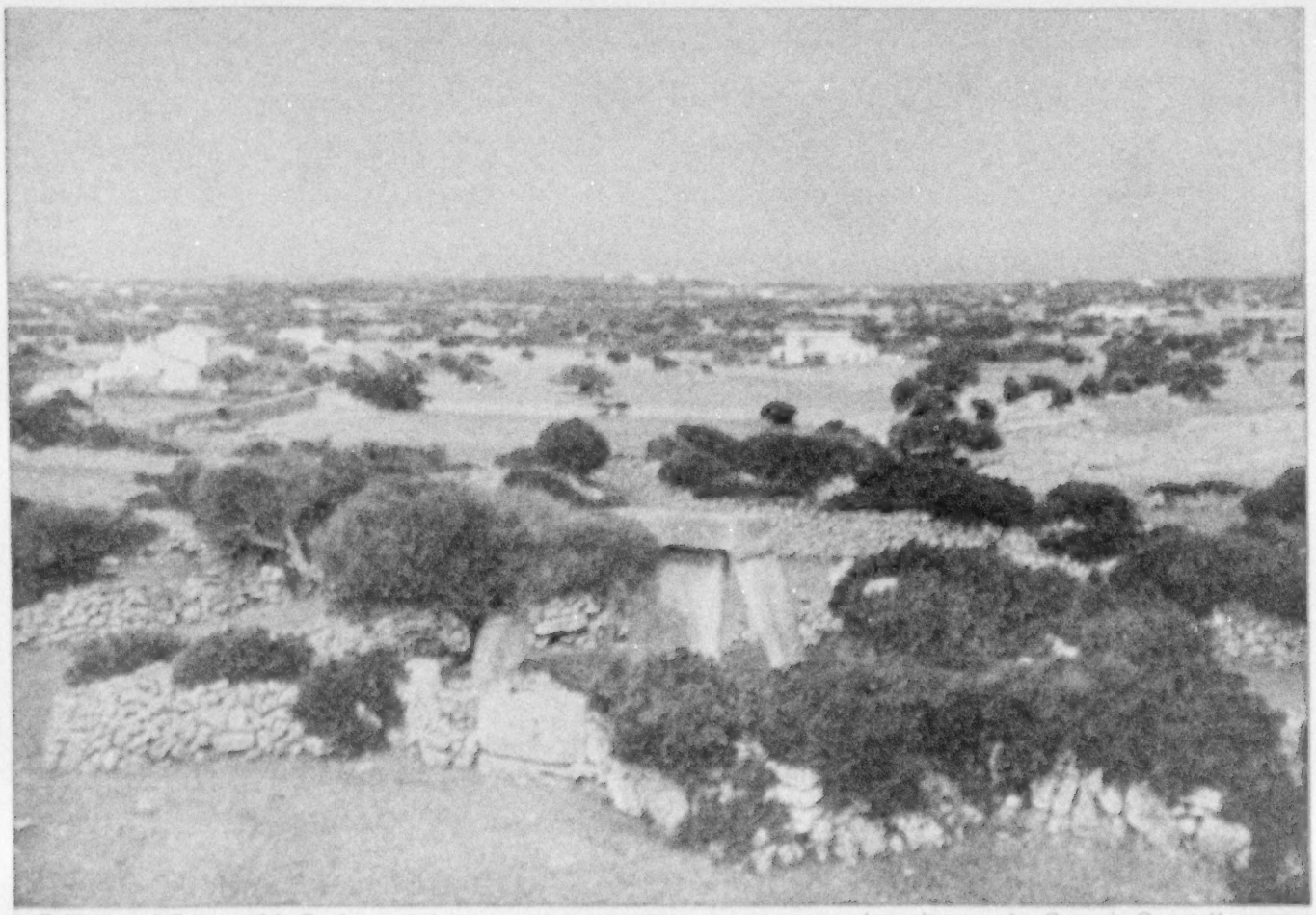
ALONG THE QUAYS OF VILLA CARLOS

This is a suburb of Mahón, the principal city of the island of Minorca.



THE PORT OF POLLENSA NESTLES BENEATH CHALKY CRAGS

One of the most charming places on Majorca is this tiny village, a haven for artists. The bay on which it is situated is bordered by cliffs that in places tower abruptly to a height of 1,000 feet.



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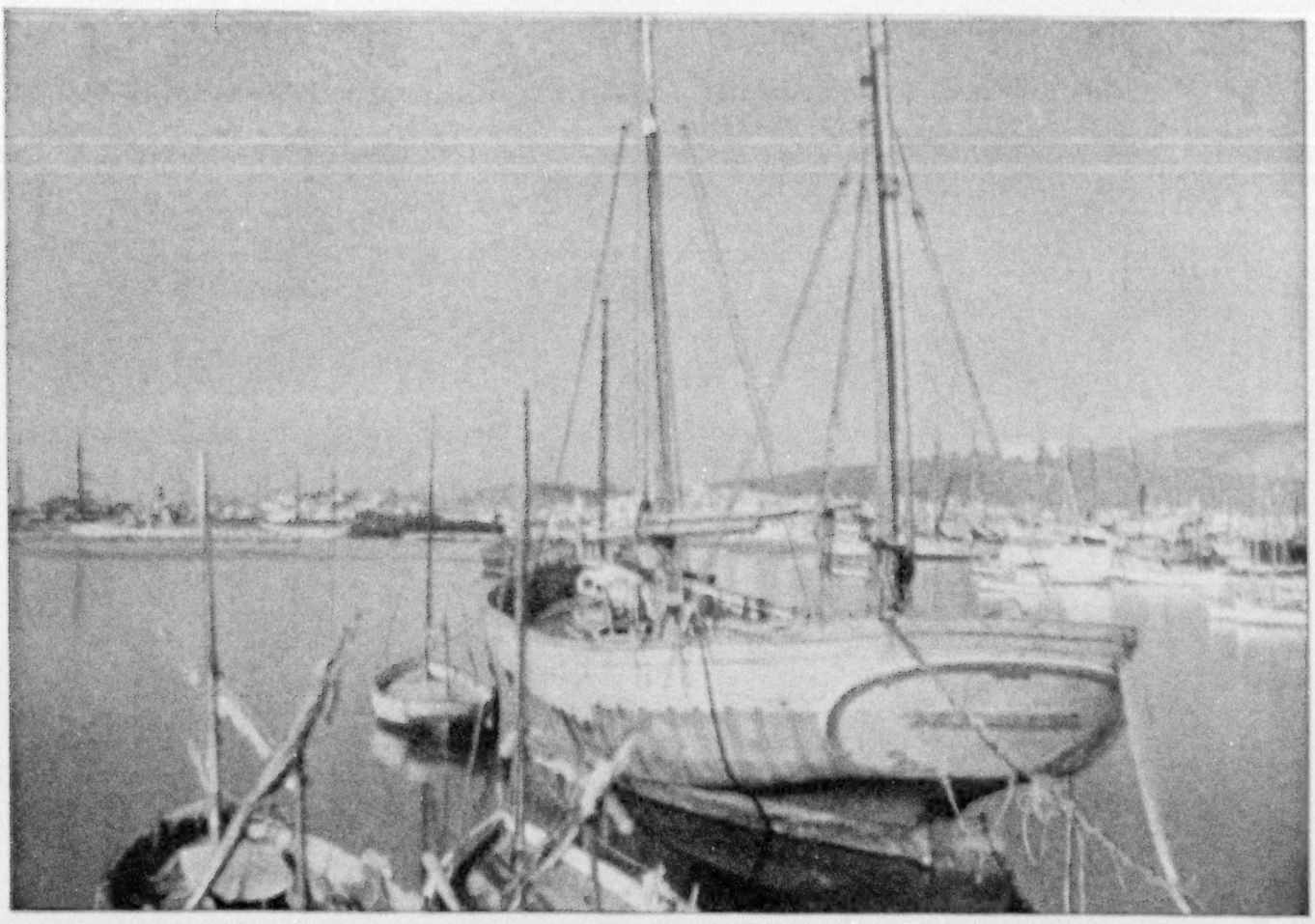
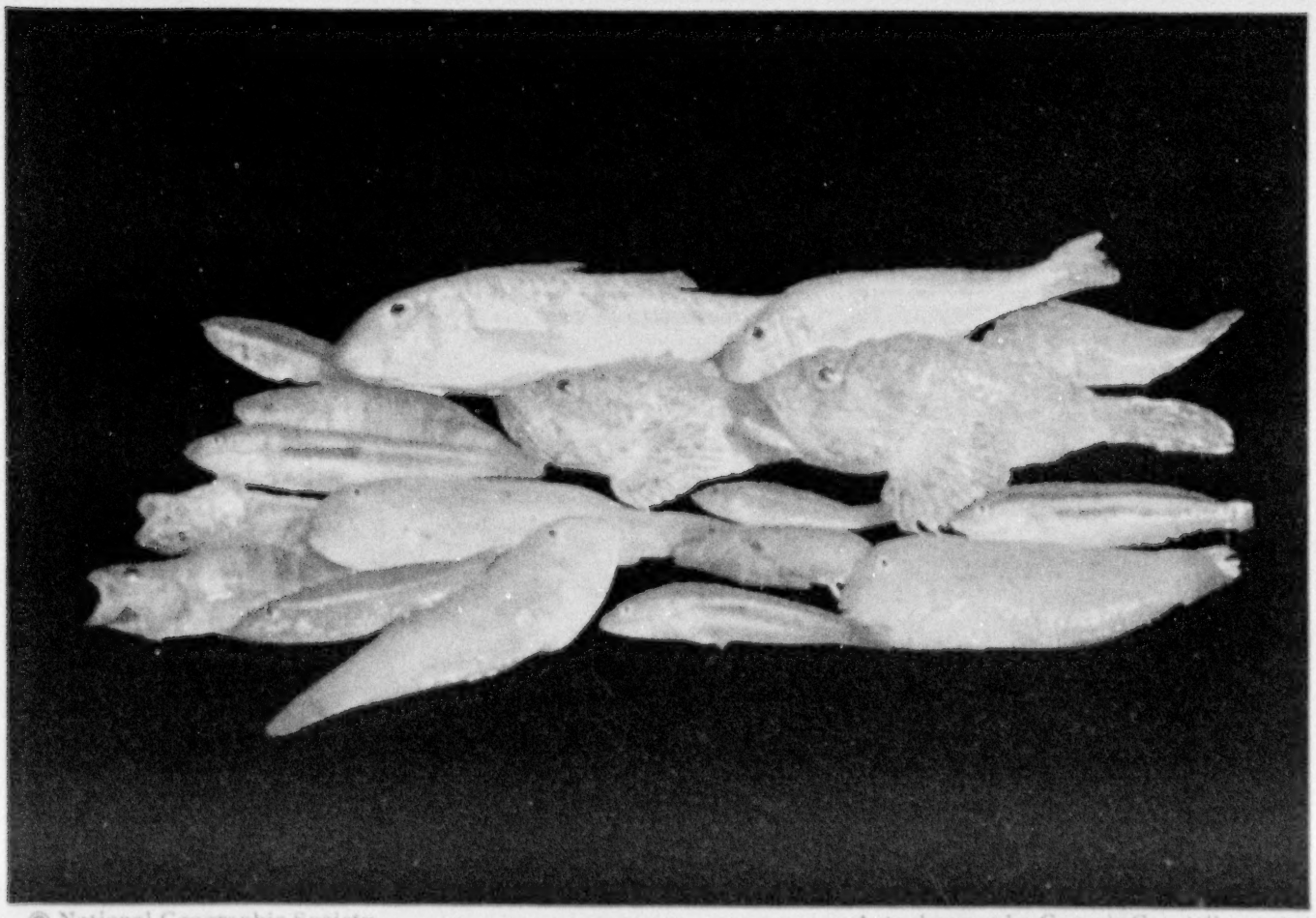
MONUMENTS THAT SAW THE DAWN OF HISTORY

Similar in some respects to the prehistoric relics of the Stone Age found at Stonehenge in England, the *taulas* of Minorca were probably used as altars. They are usually surrounded by stone walls (see also illustration page 201).



BELLVER CASTLE STANDS GUARD OVER PALMA'S HARBOR

King Jaime the Second began the construction of this impregnable stronghold (in the right background). Palma is the chief city of the Balearic archipelago.



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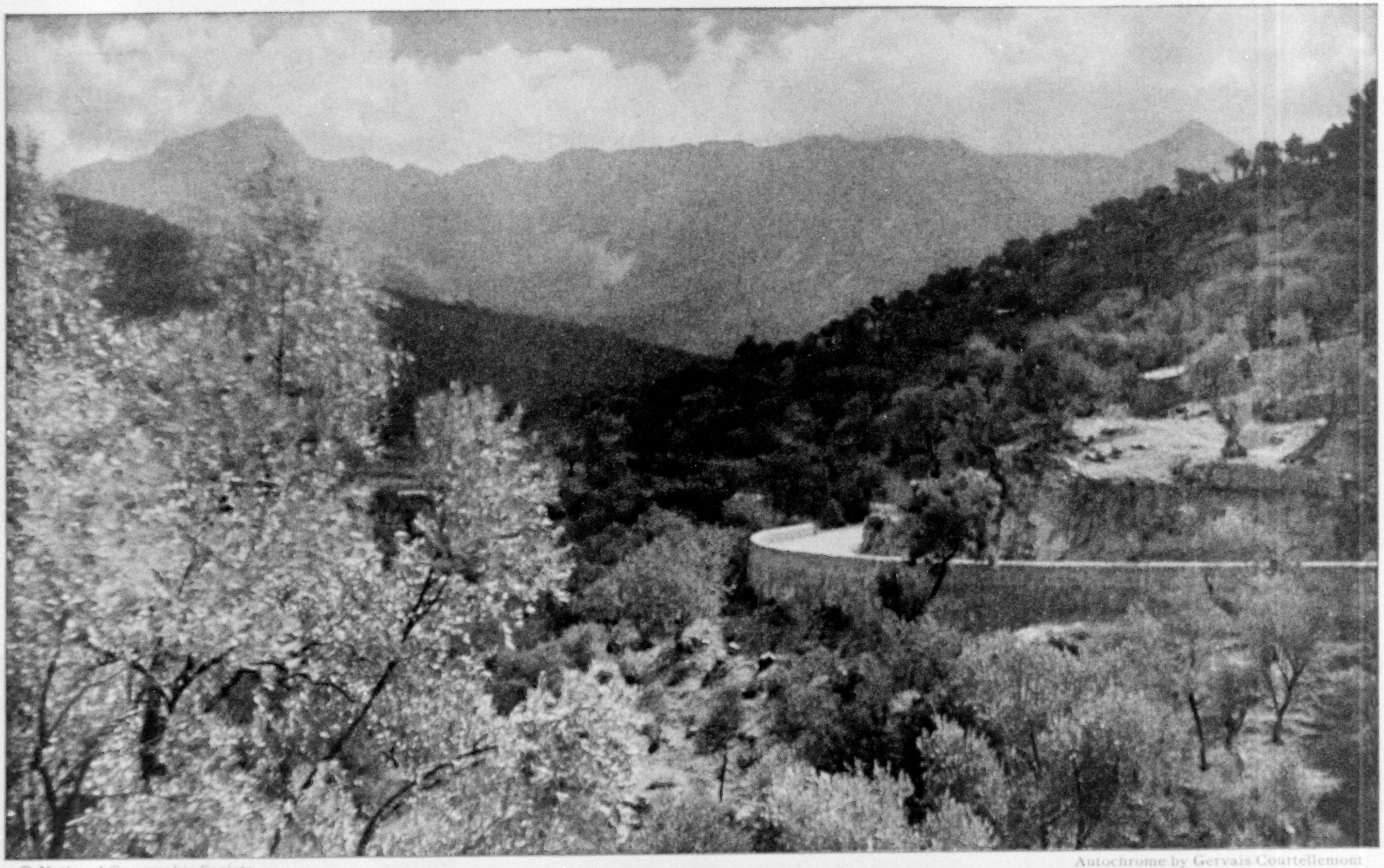
MORE PICTURESQUE THAN PALATABLE

A great variety of seafood is found in the waters about the Balearics, but to the average foreigner the species are more notable for their strange shapes and exotic coloring than for appeal to the appetite.



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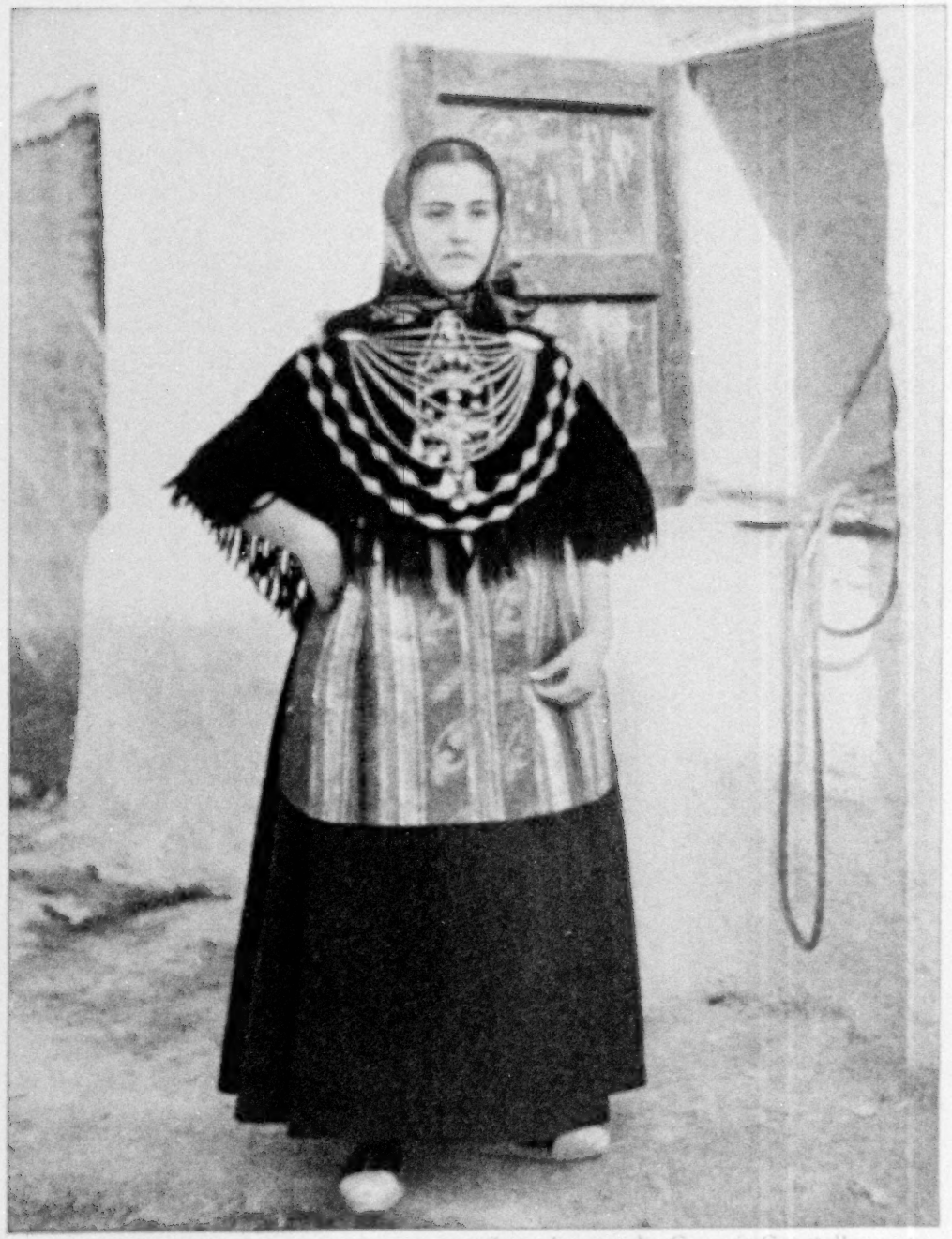
THE RUGGED COUNTRY BACK OF SÓLLER

Here the highest peak on Majorca rises to a height of 4,800 feet. The slopes of the mountains are covered with pine and carob trees, while the valley in the midst of which Sóller nestles is golden with orange and lemon gardens. These latter probably gave the town its name, which in its original form meant "a golden shell." In the 16th century Sóller was attacked by a large force of Barbary pirates. Tradition says the invaders were defeated with a loss of 600, while the islanders sustained only six casualties.



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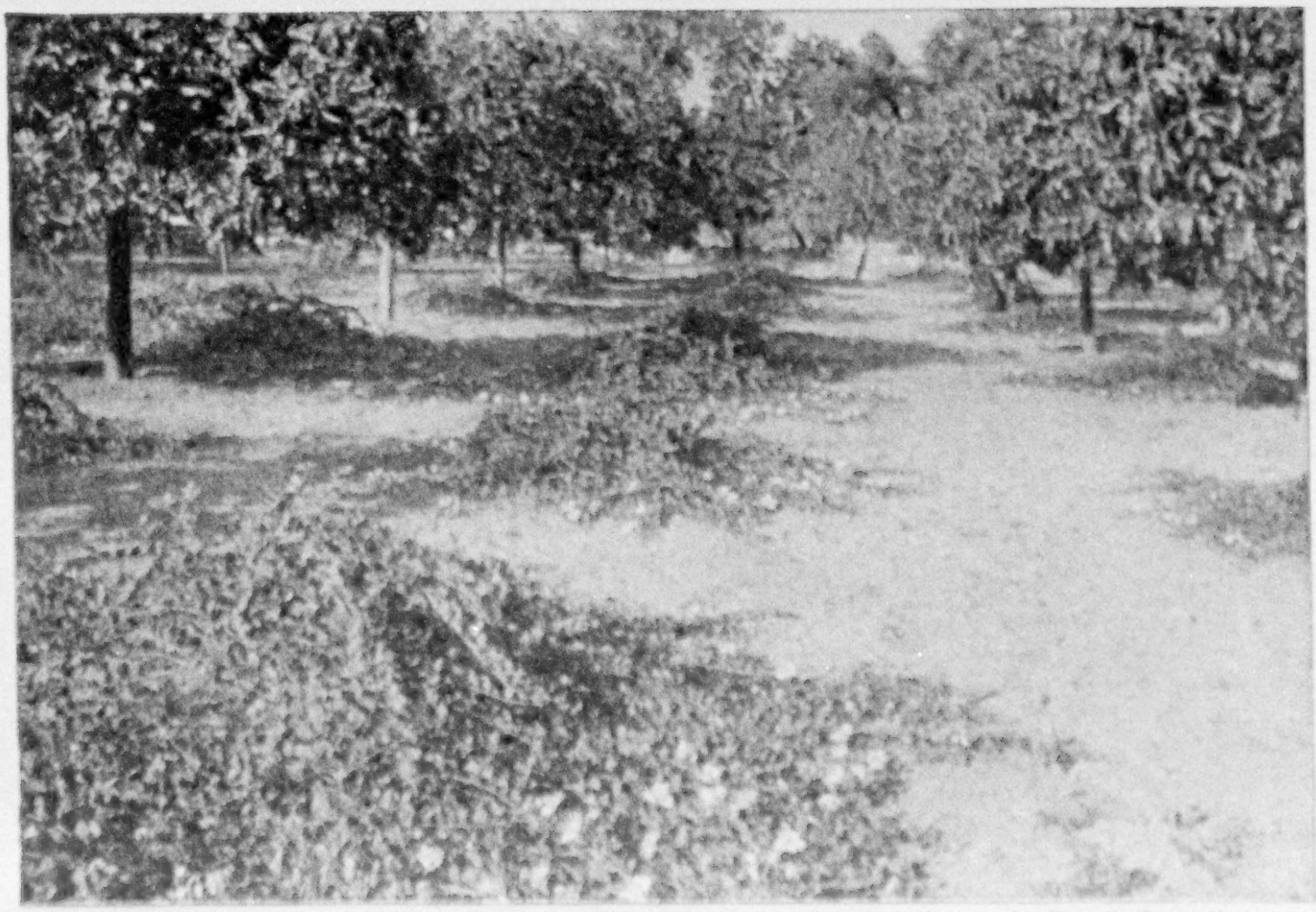
TRADITIONAL COSTUMES STILL HOLD THEIR OWN AMONG IVIZA'S PEASANT HILLS

Although bobbed hair and abbreviated skirts have appeared in the island's capital, the fashions of other days still find favor among the women of the countryside. The holiday attire of these daughters of the soil not uncommonly consists of as many as ten skirts, each very full and a bit longer than the one next beneath. As the ladies walk they raise the outer garment above the knees, that the beauties of the underskirt may not be entirely lost. Their shoes are shapeless creations of white canvas.

MELONS FOR SALE ON THE QUAY AT PALMA



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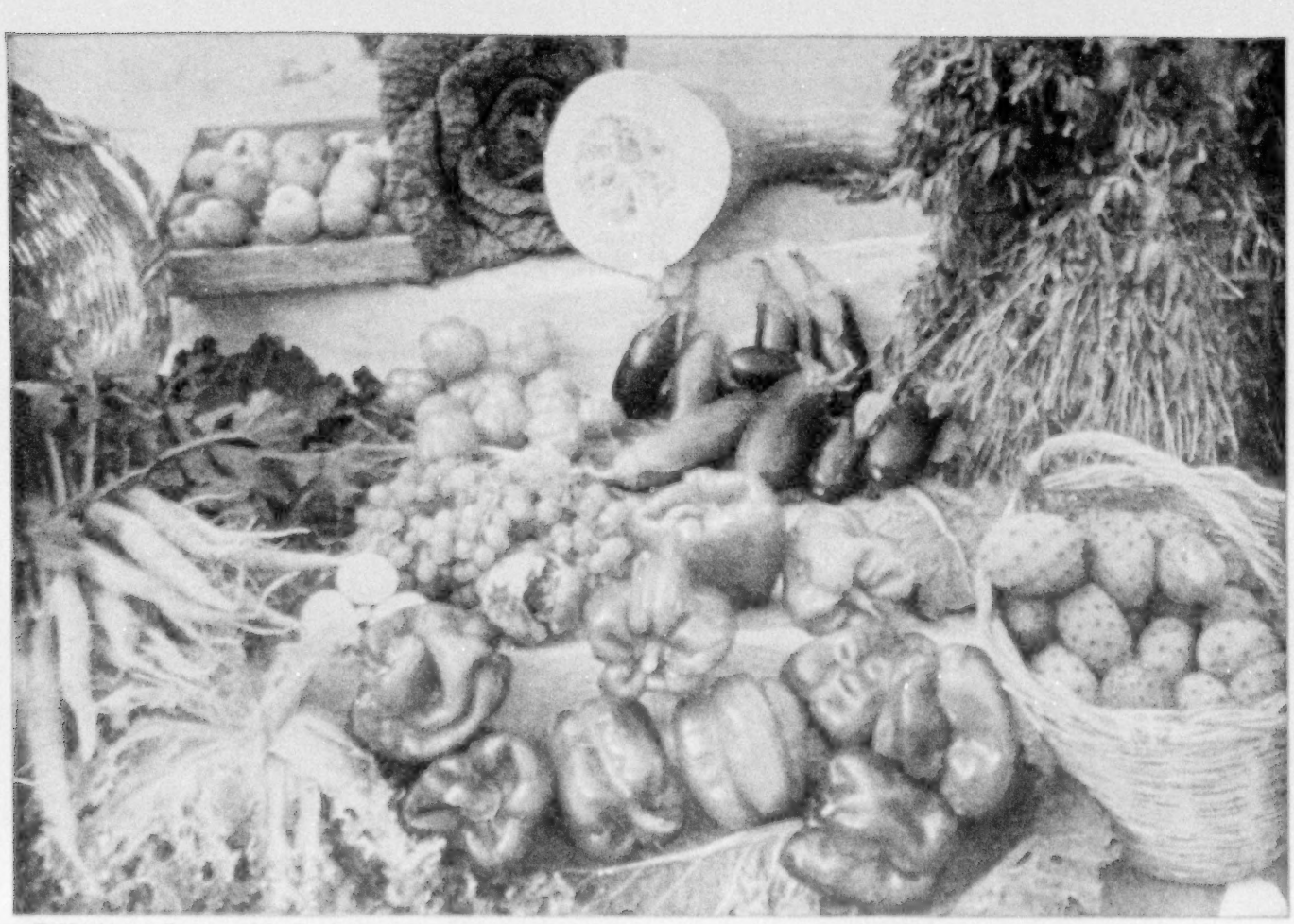
GROWING DECORATIONS FOR AMERICAN SALADS

The United States imports many of its capers from Majorca. They are the unexpanded buds of a trailing shrub which has much in common with the ordinary bramble. It is grown extensively in Mediterranean regions.

FRUITS OF THE CACTUS IN THE BALEARICS



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MAJORCAN SUNSHINE PRODUCES VEGETARIANS

During the summer, which in Majorca lasts nearly all year, people avoid the use of meat but consume large quantities of green vegetables and fruit. The eggs (left center) provide a "yardstick" by which to judge the size of the other items.

A SUNNY FARMYARD NEAR MAHÓN

The pumpkin crop has been spread out on the roof (right background) to dry.

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PREPARING FIGS FOR PALMA'S MARKET

Each small farmer dries his crop of figs and then combines with his neighbors to sell the product to a city buyer.

HARVESTING THE FRUIT OF THE CAROB TREE

(See also the lower illustration, Color Plate XIV.)

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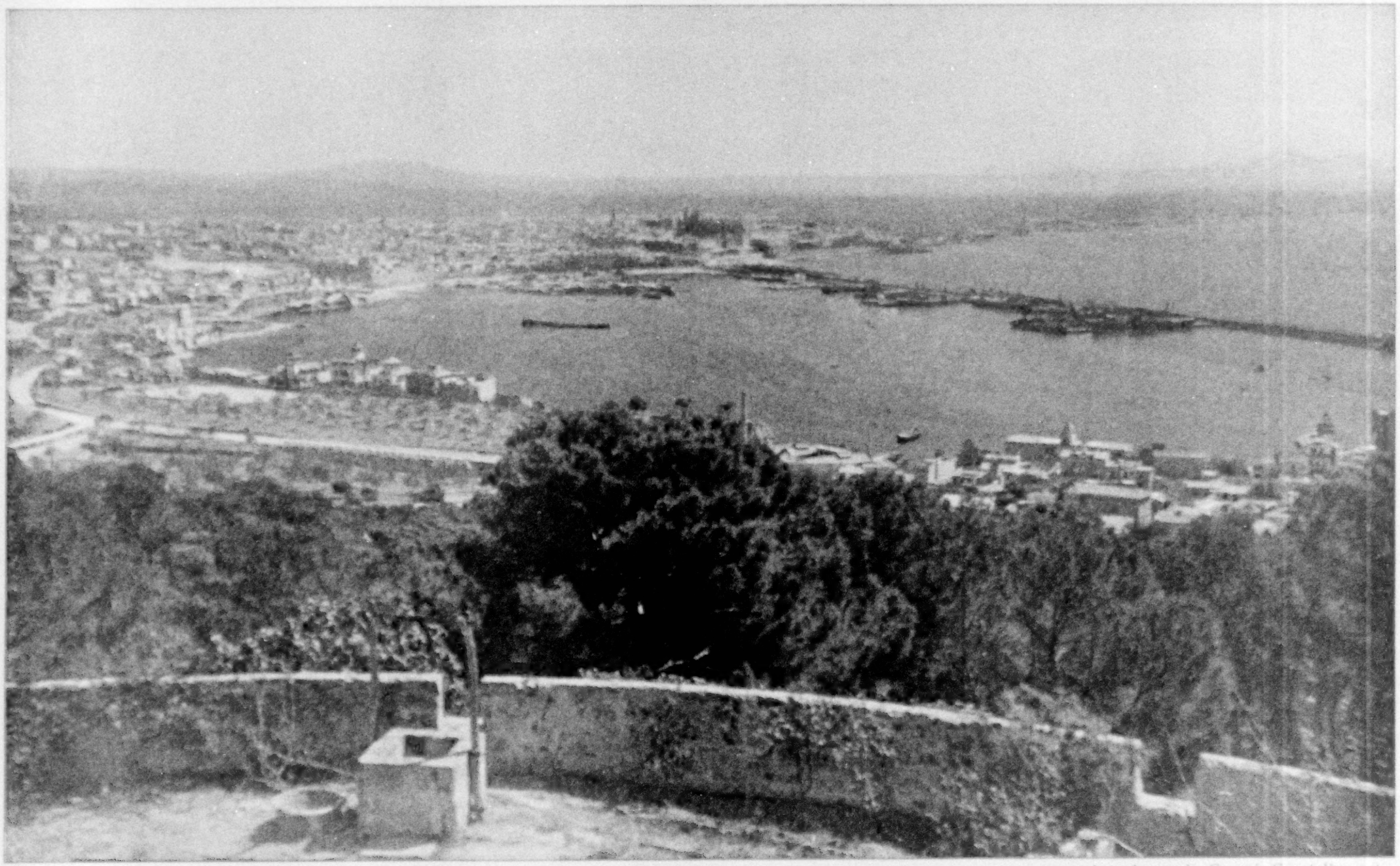
ALMONDS DRYING IN THE SUN AT ALARÓ

This nut is grown extensively for export both on the Spanish mainland, in the neighborhood of Málaga, and in the Balearics.



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MAJORCA'S CAPITAL ONCE PLAYED A MAJOR PART IN THE AFFAIRS OF MEN

From the 15th to the 18th centuries the Balearics occupied a place of importance in the Mediterranean world. Nine hundred vessels and more than 30,000 sailors went out from Palma alone and to a great extent the islands dominated the commerce and shipping of the western end of the great inland sea. The cathedral, which may be seen in the central background, is Palma's most imposing architectural offering. It was begun by Jaime I early in the 13th century but was not completed until several hundred years later.

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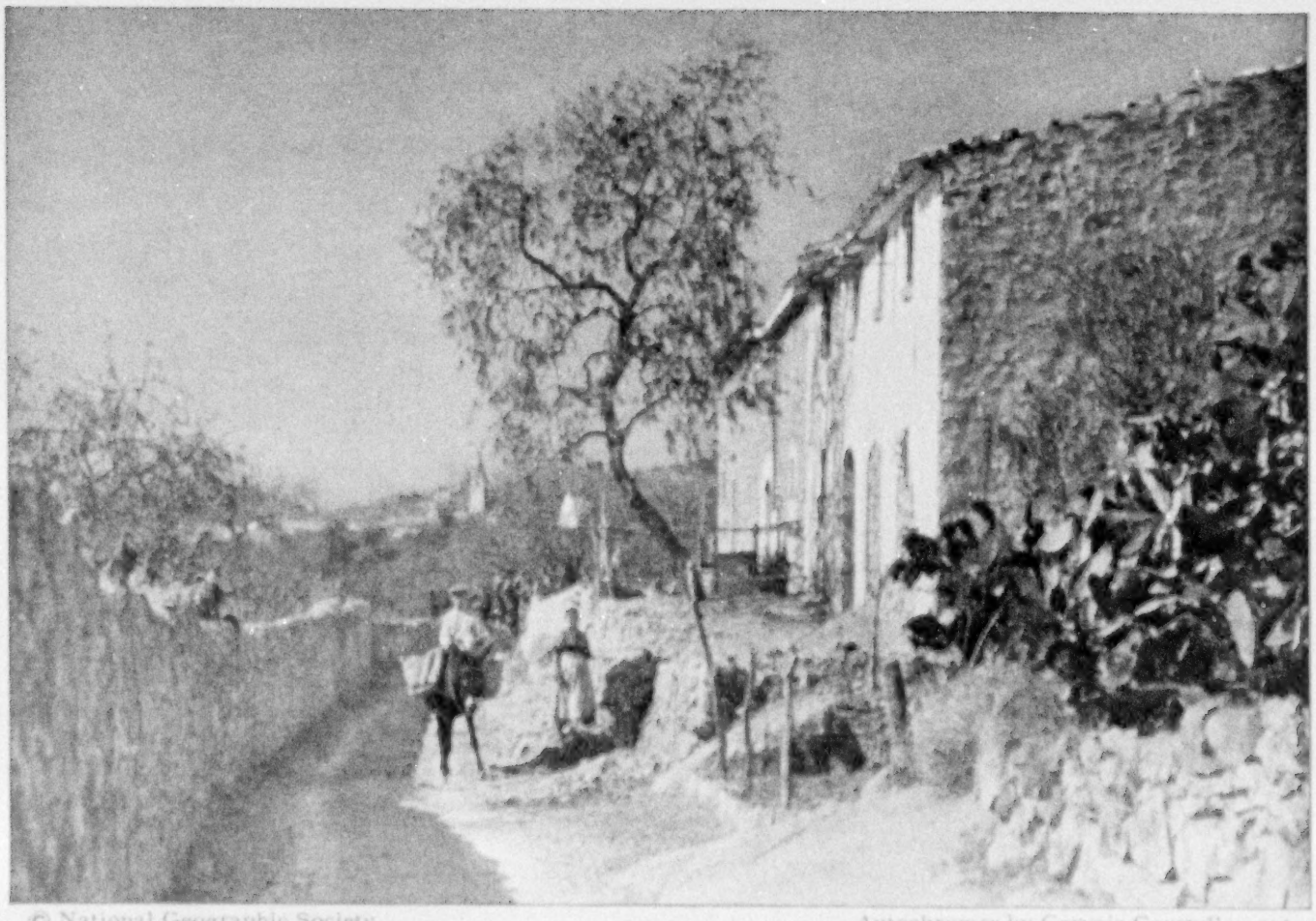
YOUNG WOMEN OF IVIZA WEARING FAMILY HEIRLOOMS

Even if a girl be disinherited and lose all claim to other family property, she cannot be deprived of this jewelry, which consists of from six to a dozen graduated gold chains that reach from shoulder to shoulder and are draped from throat to waist. Worn beneath these chains is a jeweled cross depending from a crown of similar design (see also Color Plate V).

HERE CHOPIN COMPOSED IMMORTAL MELODIES

In the 14th-century Carthusian convent at Valldemosa, one-time summer resort of the Moorish kings of Majorca, the great French-Polish composer wrote some of his finest music.



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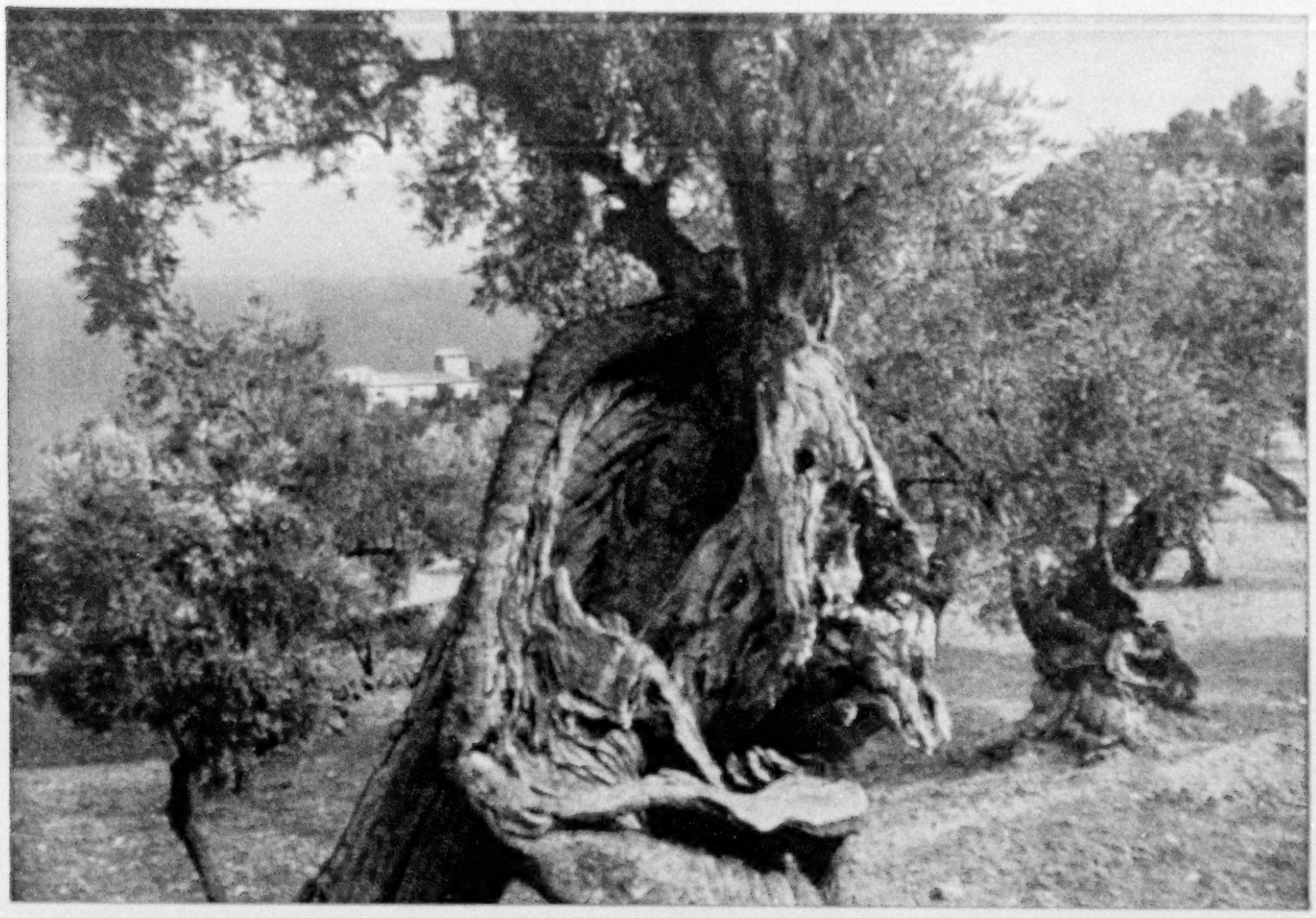
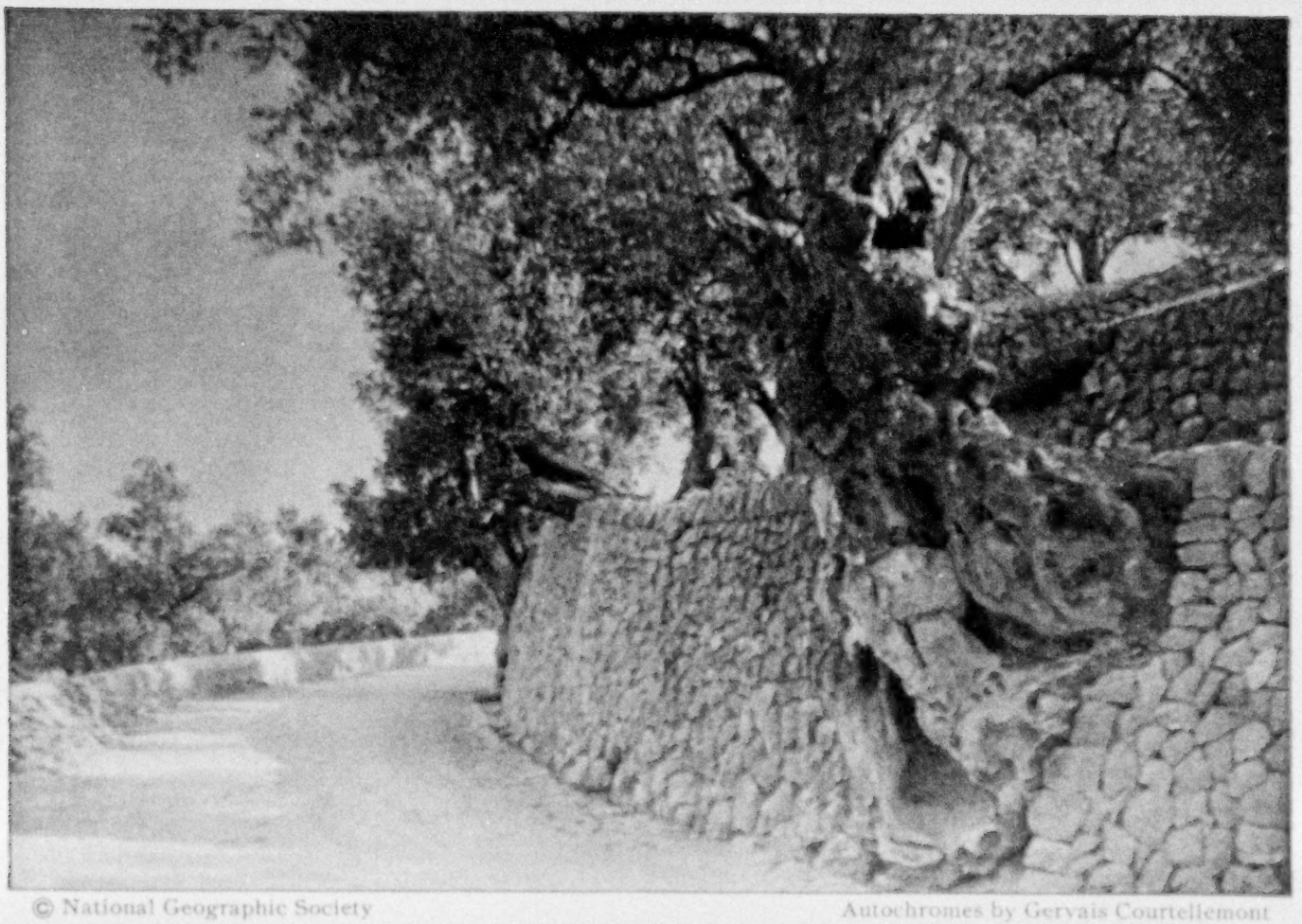
LIVING IS A LEISURELY BUSINESS IN MAJORCA

The people seldom hurry on this enchanting isle. Nature is generous with all of her gifts except water and the islanders have learned to conserve well all that she gives them. Each bit of land is so graded that the rainfall will drain into one of the innumerable storage reservoirs found in every garden and which make it possible for things to grow during the hot, dry months.



CASTLE MIRAMAR, VIEWED THROUGH A FRAME OF OLIVE

Once the site of a famous school and monastery, the estate of the late Austrian Archduke Ludwig Salvator is one of the show places of Majorca (see also page 178).



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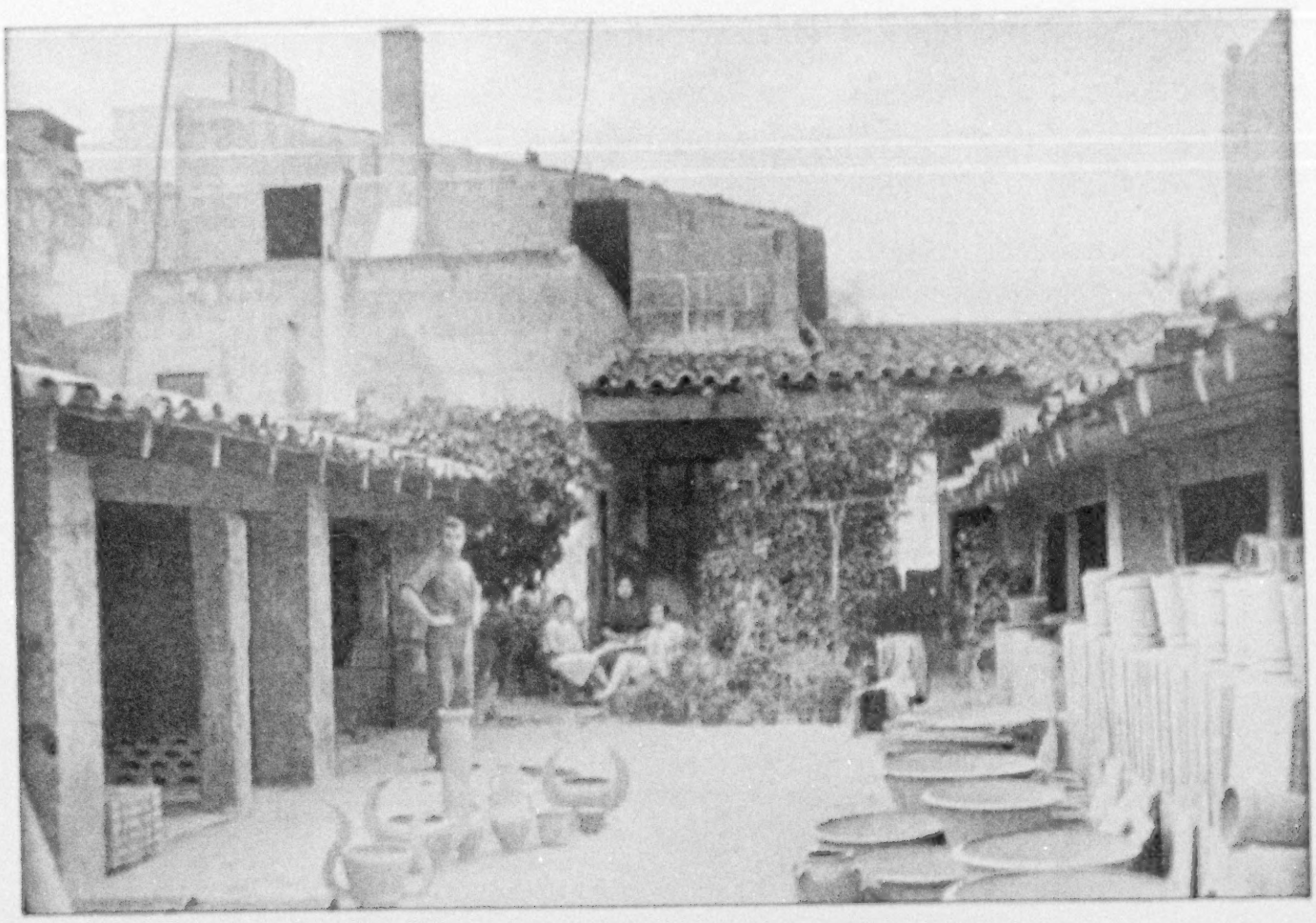
SOME BALEARIC OLIVE TREES HAVE LIVED LONGER THAN METHUSELAH

For centuries the olive tree continues to bear fruit. The primitive oil presses are sometimes nearly as old as the trees and consist of two huge circular stone jaws with an enormous beam as counterweight. The olives are placed on the lower stone, thoroughly drenched with boiling water, and then the upper one is pressed down on them with a windlass.



THE INDUSTRIAL REVOLUTION HAS NOT YET REACHED FELANITX

It has been aptly said of the Majorcans that they are industrious rather than industrial. There are few factories and many of the articles produced are made in the home or in a little shop connected with it. Some of the island's pottery is of a superior quality.

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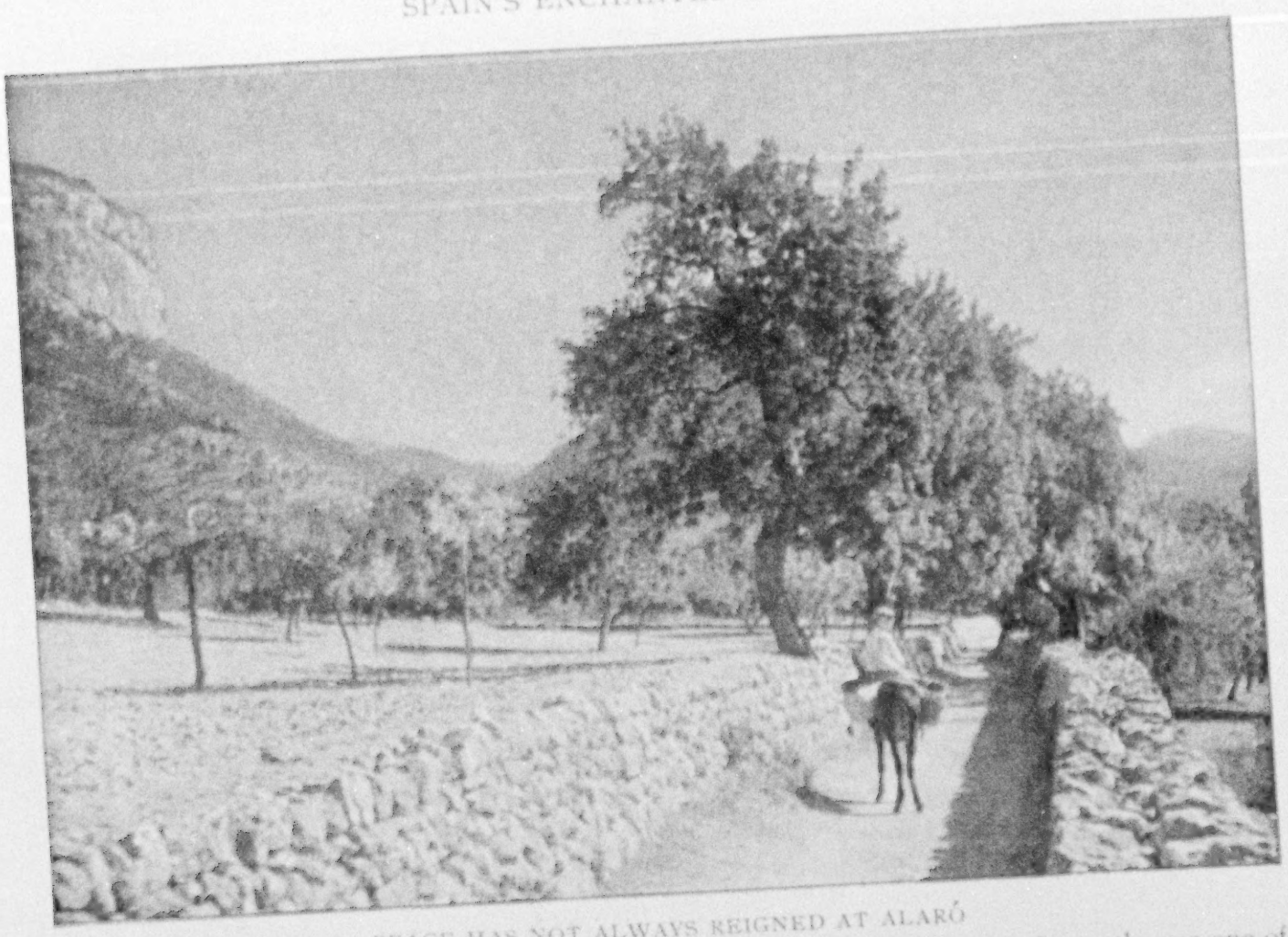
THE CAROB'S FRUIT IS LINKED IN LEGEND WITH JOHN THE BAPTIST

The evergreen produces a flat, pulpy pod similar to that of the locust. The pods have a sweetish flavor and are used as food for cattle and to a less extent for men. The fruit is sometimes called "St. John's bread," because of the erroneous belief that its pods were the "locusts" upon which the saint subsisted in the Wilderness.



PEACE HAS NOT ALWAYS REIGNED AT ALARÓ

In days past Alaró has been no stranger to turmoil and strife. The near-by castle was one of the strongest in Majorca and once resisted an invader so stoutly that when finally captured the enemy commander wrathfully ordered its defenders roasted alive on iron spits.

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THE HILLSIDES OF MAJORCA ARE CLAD IN OLIVE GREEN

Thousands of olive trees grow in the mountainous regions of the island. Pressing their fruit is a major industry and in the more remote parts of the country takes on an unusual significance. The farmer's crop is harvested by young girls invited for the occasion from some near-by village and they usually make their task a merry one.

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Autochrome by Gervais Courtellemont

PREPARING A MEAL BY THE ROADSIDE

This man is making ready a repast of cactus fruit and if you happened by he would invite you to share it with him, for the Majorcans are a friendly people. One is always at liberty to help himself to any fruit or vegetables that he may find growing and is equally welcome to a mattress and blanket in any house. Doors are almost never closed and locks are practically unknown.

without number in the city, each richly reminiscent of the Balearics' romantic history—the Cathedral, Bellver Castle, the Church of San Miguel; the Church of San Francisco, last resting place of Ramón Lull, successively page and courtier to Jaime II, notorious libertine, convert, student, writer on religion and science, preacher, and finally martyr and, next to the Conqueror King, the island's greatest idol (see, also, pages 178 and 202).

Majorca is saucer-shaped, with the principal elevations thrown up around the edge and almost surrounding a broad central plain. On a motor tour one passes mountains terraced from base to tip for olives, almonds, and vineyards; through rich, flat farming country of alternating fields of grain and garden produce, more almonds and other fruit, principally orchards of olive trees, centuries old, gray and fantastically gnarled. Such an orchard appears the final incarnation of all the crabbèd, contentious, cross-grained spirits of the world (see Color Plates XII, XIII, and XV).

MAJORCA'S PRIZE DISH FOR THE EPICURE

If one has the fortune to have a rich Spanish friend with a *finca*, or farm, in the country, one may have the luck to taste *coca de sobreasada* fresh from the oven.

This rural delicacy is a culinary achievement. The Majorcan goodwife takes a round, shallow tin pan at least two and a half feet in diameter and spreads in it a thin layer of sweet bread dough, which she covers with sliced sweet peppers, the green variety; then superimposes at frequent intervals bits of sobreasada (uncooked pork sausage, made a brilliant vermilion from paprika seasoning), the size of large walnuts. The plentiful layer of sugar sprinkled on top melts in the baking, and there you have coca de sobreasada!

Will I be believed if I avow that the traveler who happens in when this confection is drawn from the big stone oven of the farmhouse and is invited to help himself is favored of the gods? It is my contention that he is.

Majorcan soup, a compound of bread and vegetables, served almost dry, is also worthy of serious consideration, but a coca of great local popularity, in which spinach and tiny fish, served in their natural state, are substituted for sweet peppers and sausage, cannot be commended to American palates.

CABRERA'S TRAGIC CHAPTER IN HISTORY

I had some difficulty in locating the government mail boat that was to take me to Cabrera, a mere speck of volcanic rock of eight square miles that supports a population of 42 souls and lies three and one-half hours of steaming to the south of Majorca. I finally discovered the steamer *The City of Palma* almost hidden in the rigging of the surrounding sailing vessels. Now she carries fish, fishermen, and a very occasional traveler between Palma and Cabrera, but in the early eighties she was the Italian royal yacht, *Urania*, as testified by her ship's bell. She is a bit bedraggled and pitiful and has ceased to take herself seriously.

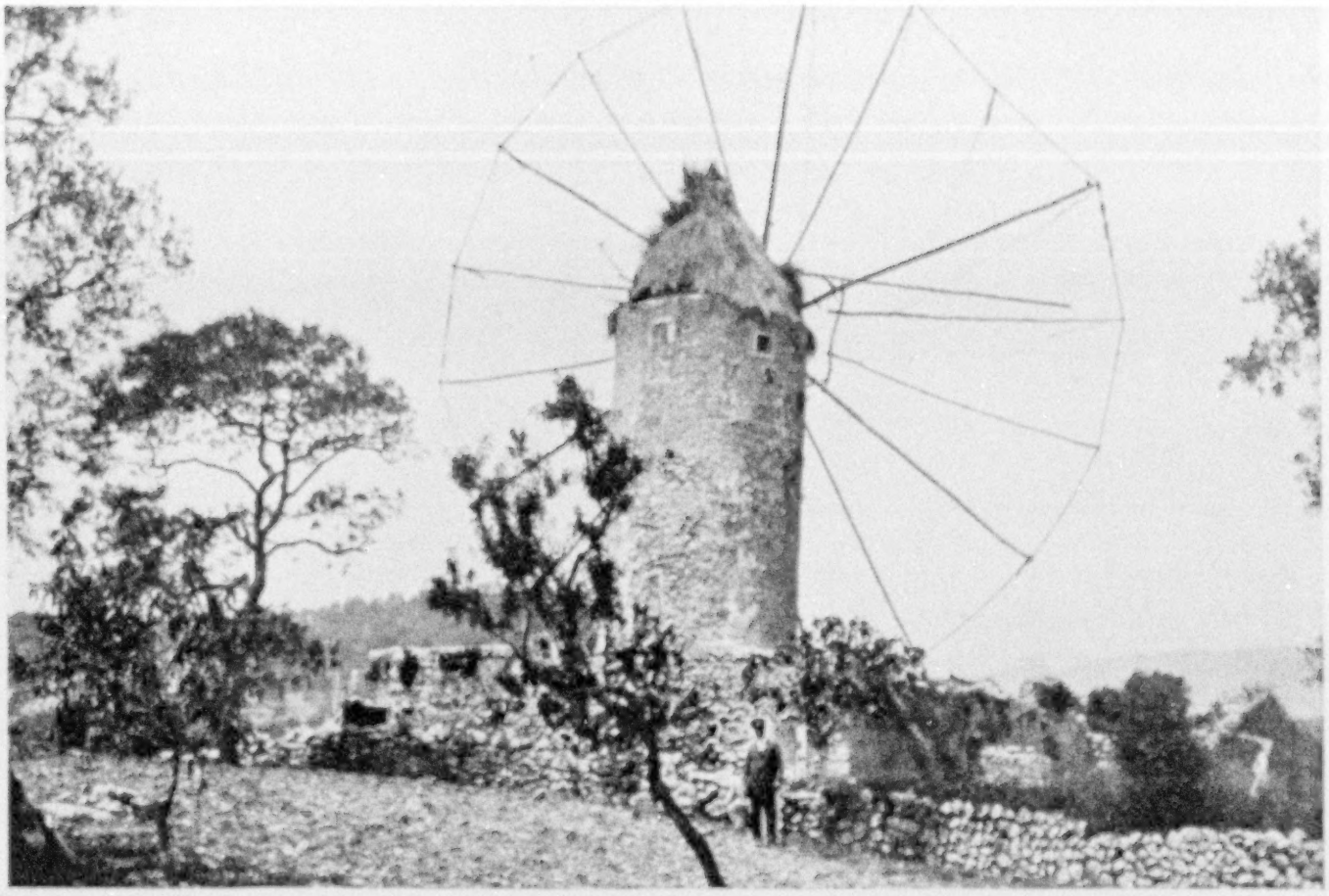
There is no tiresome insistence on schedules; on being asked when we would leave Cabrera, the captain said:

"Señor, we are due to leave at 2 o'clock, but when you are tired of looking at the mountains tell me and we will go."

Cabrera reveals a keen sense of the dramatic. A most dismal spot, she is still completely in character with the rôle assigned to her during the Peninsular War. In 1808 Spain took thousands of French prisoners at the Battle of Bailén. They were held on the mainland until cholera broke out and they became a menace. More than 4,500 unfortunates were placed on Cabrera. The outcome was frightful. There was much distress at home; Spain could not feed her own subjects, much less prisoners. Set down on that barren rock without food or shelter, 2,000 Frenchmen perished.

Even now Cabrera occasionally knows hunger, when storms prevent the former royal yacht from bringing supplies. Only three winters ago Christmas was far from merry, for the island was storm-bound for 23 days. The Government was on the point of sending a warship with food, when the waves abated and the islanders were able to appease their appetites again.

In the time of the Barbary pirates a fort crowned the sheer rock of great height which overlooks the beautiful harbor. It was built to prevent the seizure of Cabrera as a base of operations for the



Photograph by Roy W. Baker

ANOTHER OF DON QUIXOTE'S ANCIENT ENEMIES

Many American windmills are now being installed in Majorca, but they cannot compete in picturesqueness with such antiquated types as this one near Selva.

Photograph by L. F. Hurlong

A HOT MIDDAY MEAL BY THE ROADSIDE

Majorcan workmen do not carry lunch, but stop at noon and prepare their favorite soup, made of brown bread and vegetables, over an outdoor fire. With this tasty dish and a bottle of wine, they have a meal a king might envy.

Photograph by Roy W. Baker

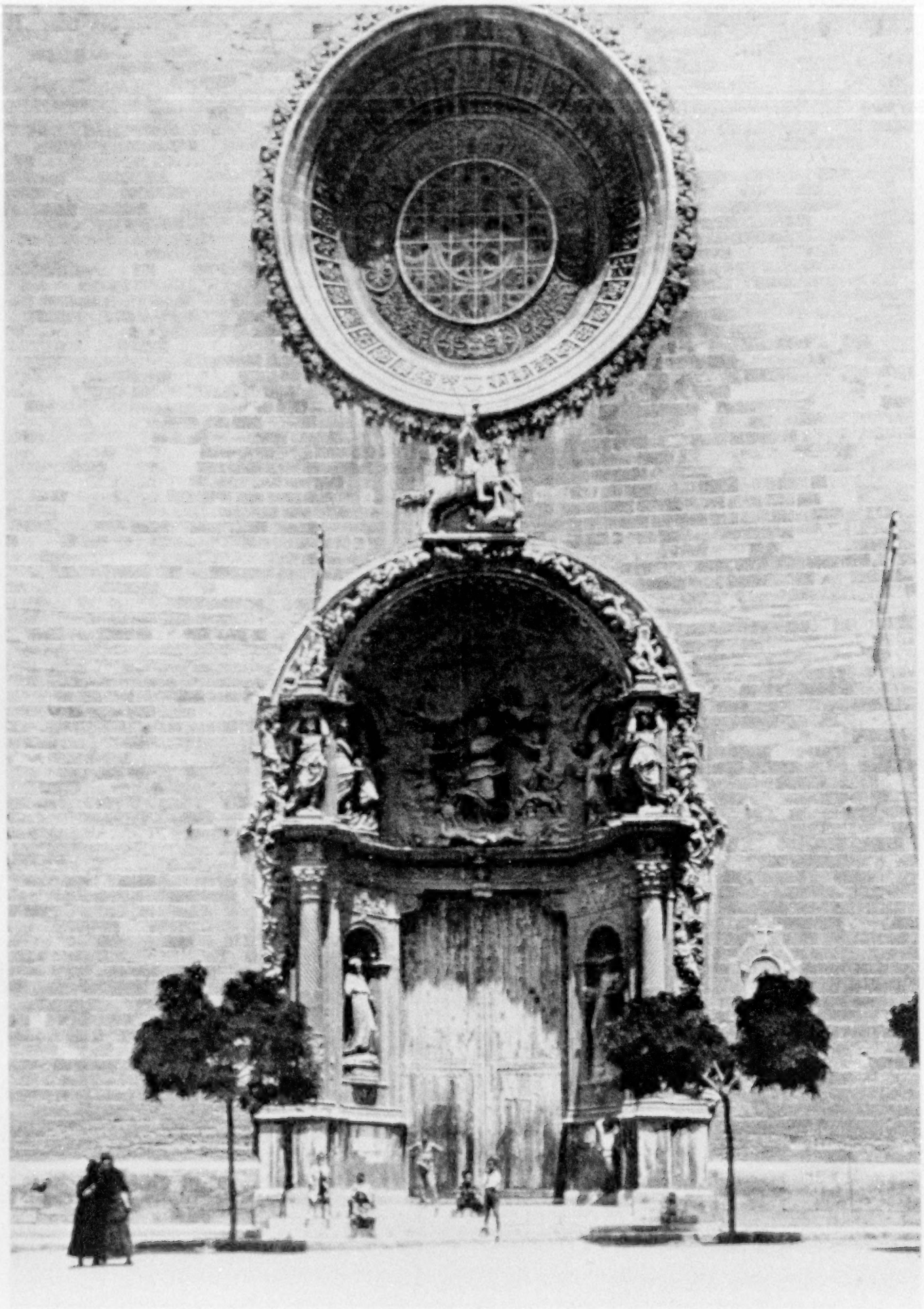
A RELIGIOUS PROCESSION IN SAN ANTONIO, ISLAND OF IVIZA

During the author's visit to this island one of the most important religious celebrations of a century took place. The archbishop's chair, vacant for 76 years, was filled at last (see page 205).

Photograph from Roy W. Baker

MINORCA'S MYSTERIOUS PAST LIVES ON IN THE NAU OF ELS TUDONS

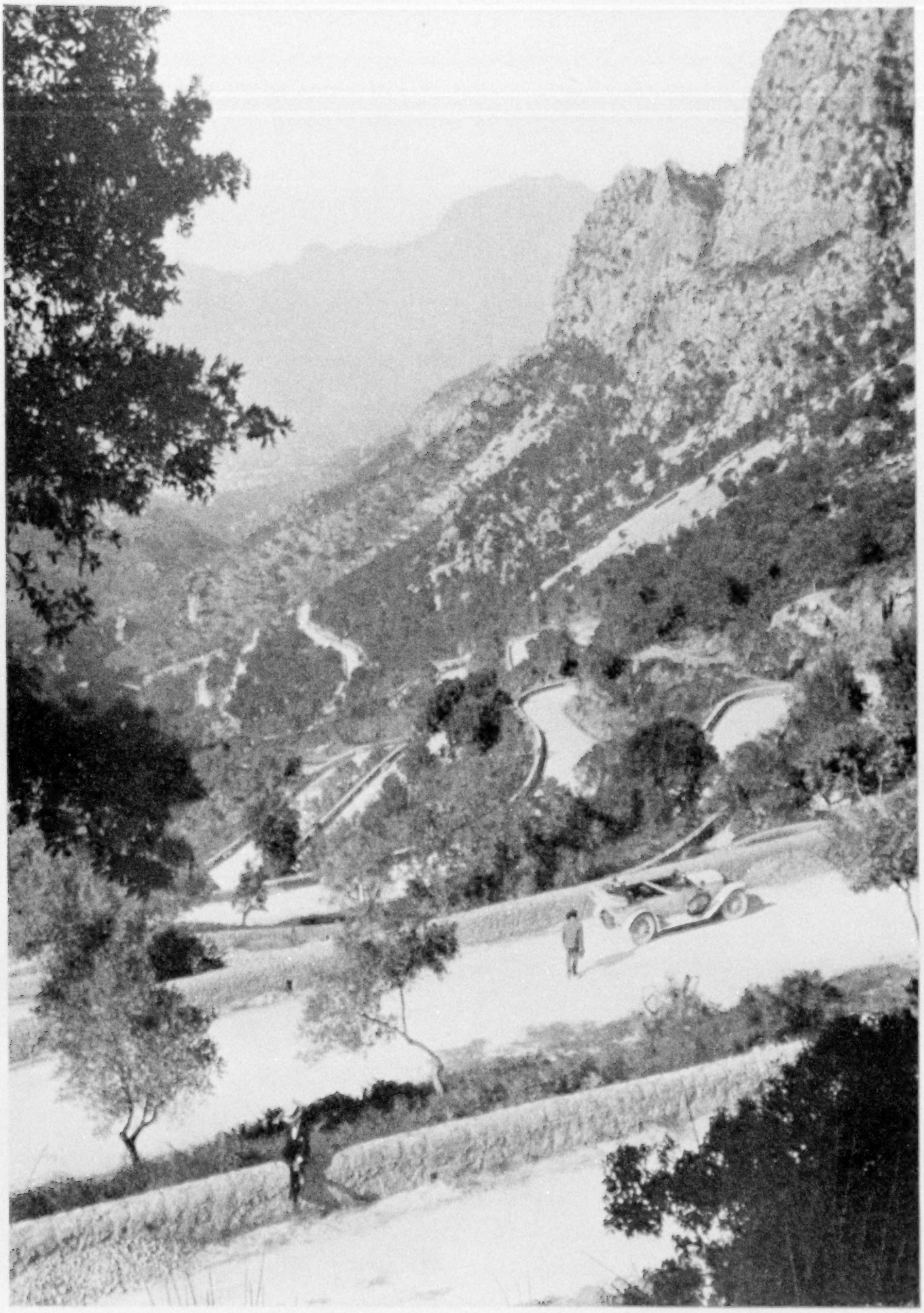
Such prehistoric structures, of which this is the largest and most impressive example, resemble fishermen's boats, overturned and with one end flattened. Els Tudons, on the Ciudadela-Mahón road, is 42 feet long and 14½ feet high. Inside is a chamber about 35 feet square.



Photograph by Burton Holmes from Galloway

BEHIND THIS PORTAL IS MAJORCA'S MOST SACRED SHRINE

The Church of San Francisco, in Palma, guards the tomb of the island's greatest son, Rámon Lull (see pages 178 and 199). The 13th-century Gothic edifice itself is one of Spain's finest national monuments, though the actual façade is of a later date, the original having been destroyed by lightning about 1600.



Photograph by Burton Holmes from Galloway

HAIRPIN CURVES THRILL THE MOTORIST IN THIS MOUNTAIN COUNTRY

Twelve of the dizzy windings on the Palma-Sóller road, in Majorca, are visible in this photograph. This military highway stretches for 18 miles through mountain and valley, with diverse views of peaks, gorges, torrents, and green fields (see, also, Color Plate IV).

Photograph by Truyol

MAJORCA TERRACES ITS MOUNTAINS FOR FRUIT TREES AND GARDEN CROPS

Economical terracing of small strips of land can be seen in all parts of the island, but Bañalbufar applies this principle of cultivation on a gigantic scale. Row after row of terraces, each with irrigating reservoirs, spreads out in every direction, so that the ripening rays of the sun may reach every contour of this sheltered valley on the northwestern coast. This region is now an outdoor forcing house for tomatoes and other vegetables.

corsairs against the other islands. The ruins lend interest to the skyline.

Only a scrub growth clothes the mountains of Cabrera, and besides the ruins of the frowning fort two slatternly houses and a tiny deserted chapel, in sight from the boat landing, complete the desolate scene; so I was happy when I could announce that I had had my fill of the mountains and we cast off ahead of schedule.

"STEALING THE SWEETHEART" IS IVIZA'S ROMANTIC TRADITION

When the name of Iviza is mentioned, the other islands shake their heads and "look volumes." It is insinuated that this island sister is not all that she should be. I hastened to seek the explanation for the apparent libel.

Two factors are involved in the slander. The first is the seriousness with which the islanders take their love affairs. Years ago it was the custom for eligible maidens to apportion their time among their various admirers. Thus, a popular damsel might divide an evening into several periods, each suitor being allowed a definite number of minutes in which to plead his cause. If one overstayed his time—and what more natural?—he was likely to have to answer for the theft of minutes that were the property of the next on the calling list. These disputes were frequently settled with the aid of knives or pistols.

Iviza no longer punctuates her love-making with pistol shots, but there is a remnant of the old spirit in a custom that still obtains, called "stealing the sweetheart." If a young man's suit is opposed by the parents of his sweetheart, he selects a married couple of undoubted standing and respectability, to whom the situation is explained. Accompanied by one or both of his accommodating friends, the young man now goes to his beloved's home and "steals" her. She is taken to the home of the abetters of the theft, where she stays until the obdurate parents consent to the marriage.

"What else can they do?" laughed my informant, spreading his hands and chuckling at the picture of Cupid's enemies thus foiled. Apparently it never occurs to irate fathers in Iviza forcibly to steal their daughters back again.

It is easy to believe this story of "stealing the sweetheart" when one looks at the square faces, the calm eyes, and tight lips of Iviza's men.

Iviza charges that jealous Majorca, fearful that some of the profitable stream of tourist traffic may be diverted from her more familiar shores, has spread the gossip that Iviza is hard and ill-favored. This explanation is interesting principally because it shows how all of the Balearics have their eyes fixed on the tourist. They even talk in Formentera, little more than a bare rock and a couple of sand dunes, of the possibility of attracting visitors.

IVIZA IN FESTIVE ATTIRE

We arrived in Iviza during its most important week in many years. The governor of the Balearics was making one of his periodic visits of inspection; but, vastly more important, the archbishopric chair, vacant for 76 years, was filled during our stay. The latter event brought to "the capital" visitors of all classes, in fête attire, from every corner of the island.

Spanish regional costume is making one of its last stands in Iviza and Formentera. True, there are to be seen a few bobbed-haired damsels in short skirts, but the majority of the women still wear the Ivizan dress (see Color Plates V and XI).

The Sunday or dress-up costume consists of a gay plaited skirt long enough to touch the ground, under which are worn a number of other starched skirts that give it almost the circumference of the old-fashioned crinoline; a gaudy shawl envelops the shoulders, and over the head is worn a kerchief of still another color, different shades of yellow being most in favor.

The hair is parted, pulled back tightly, and worn down the back in a plait tied with a bright-colored ribbon. Usually the hair around the forehead is arranged in a series of small curls as mechanically perfect in construction as the spirals of an old-fashioned bedspring.

The feet are incased in alpargatas (see, also, text, page 179), which turn up at the toe, but they are almost hidden by the long, voluminous skirt, which sways as the wearer walks and gives her the appearance of progressing by a series of undulations. A double row of large, globular gilt buttons, worn on the sleeves from the cuffs nearly to the shoulders,

Photograph by L. F. Hurlong

AFTER CHURCH SERVICES YOUNG LADIES OF IVIZA PROMENADE ABOUT THE TOWN

The young men follow close behind the girls, waiting for their turn to bask a few moments in the smile of their loved ones. The Ivizan girl is courted by as many as thirty sweethearts at the same time. During the walk after church she divides her time equally among her suitors, each taking his turn, while the others follow patiently behind.

completes the festival attire, which is vastly becoming to the simple beauty of Iviza's women.

In addition to this finery, the unmarried women who can afford it wear numerous gold chains looped from shoulder to shoulder, with a large gold cross, pendent from the neck, in the center. Thus the eligible damsels are labeled, and as the elaborateness of their jewelry is in accordance with the means of their families, the decoration serves also as an indication of the size of their dowries.

The hands of maidens engaged to be married are literally covered with rings. After marriage the jewelry is handed down to the next oldest woman of the family, and thus serves charmers from generation to generation.

The fan of Spain, without which a flirtation is almost impossible, is replaced in Iviza by a handkerchief, which is a powerful weapon in the hands of a deft maiden. The exit from church after Sunday mass, with shoals of gaily decked damsels, each making eyes from behind her handkerchief as she floats down a lane formed by admiring village swains, suggests a Gilbert and Sullivan chorus rather than real life.

And this is the impression that the visitor takes with him from the Balearics: life played on a small stage aglow with color and romance.

ARCHEOLOGY, THE MIRROR OF THE AGES

Our Debt to the Humble Delvers in the Ruins at Carchemish and at Ur

By C. Leonard Woolley

Director of the Joint Expedition of the British Museum and the University of Pennsylvania to Mesopotamia

FIELD archeology is a science with many sides.

The visitor to an archeological exhibition sees only the objects and knows nothing of the way in which they were got out of the ground or of the various processes through which they may have gone before they were fit to be put in a glass case.

The reader of an archeological report must find it hard to realize on what a mass of detail, sometimes intangible detail, each conclusion is based and how much manual labor went to its making.

Neither the one nor the other thinks at all of the multifarious jobs which occupy no small part of the field worker's time—the organization of the expedition, the purchasing of stores, the choice of tools, the photography, the medical care of the men, the accounts and pay sheets, even the question of language.

THE MAN WITH THE PICK IS THE ACTUAL DISCOVERER

I have often been asked whether I do all the digging with my own hands, and the questioner has been surprised to learn that I employ anywhere from a hundred to three hundred men.

Perhaps we archeologists are ourselves to blame, and in our anxiety to tell of our results have failed to do justice to the laborers who work for us; but on them must depend in no small degree the success of our excavations.

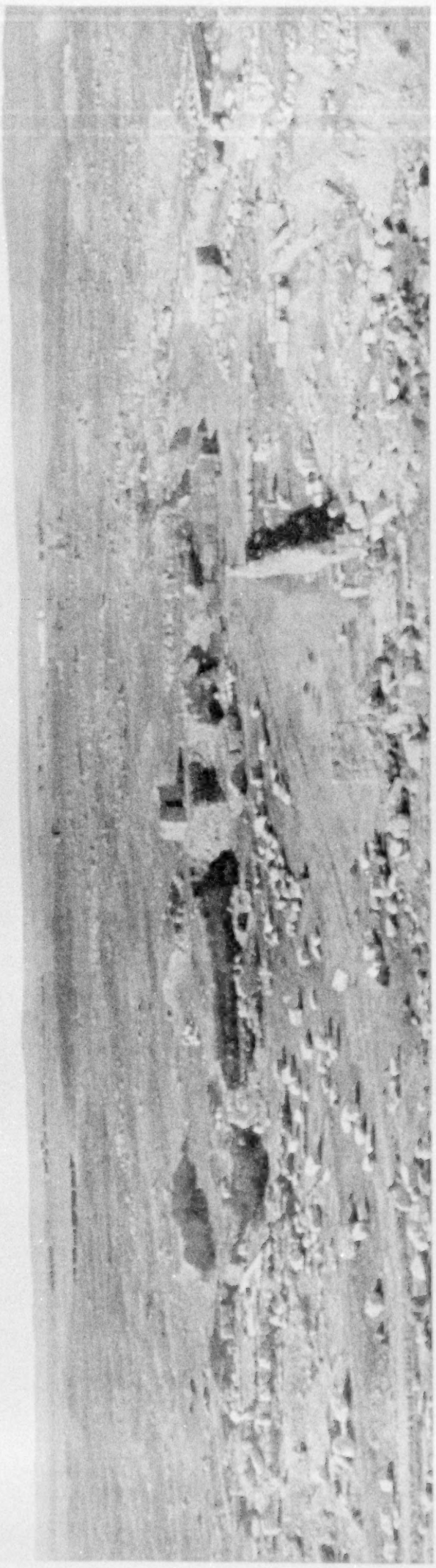
However careful may be the supervision, it is, after all, the man with the pick or spade who actually discovers the bulk of the objects concealed in the earth; if he is stupid or clumsy, the object may be overlooked or broken; if he is dishonest, it may never come to the sight of the archeologist directing the work; and if he be simply indifferent, thinking only of his day's wage and not at all of the interests of the dig, he may do irreparable damage to the science of archeology, removing before they have been noted remains whose association is of prime importance, destroying floor levels, cutting through mud brick walls, obliterating the evidence on which history ought to have been built up.

It is essential, therefore, not only to train the gang to careful and skillful labor, but to waken their intelligence and to inspire them with a certain degree of interest in the work itself, at least to make each responsible man proud of doing the thing as it ought to be done.

This is the justification of the "baksheesh" system, whereby a man receives, over and above his wage, a reward for everything he finds. To find a thing does give a sense of proprietorship, and the reward recognizes this psychological fact and so encourages honesty; it insures care, for an object broken by the workman brings in no baksheesh, and it can be extended to cover good work as well as good discoveries. The archeologist has his scientific satisfaction in success, the workman has his satisfaction of a more material sort, but springing from the same event; so that there is a feeling of fair play.

But the baksheesh alone is not enough. It is essential to really good work, but it will not by itself assure it; there must exist in the gang some more altruistic motive if they are to do their very best, and this accounts for the difference which in my experience makes the Arab so much better a digger than the Egyptian. The latter never seems able to rise above the mere money consideration; the Arab adds to this a natural intelligence, a genuine loyalty to the people he likes, and a sense of humor.

A great deal must depend on the native foreman, the link between the alien em-



Photograph by C. Leonard Woolley

ALL THAT REMAINS NOW OF CARCHEMISH, ONCE THE PROUDEST CITY OF THE HITTITES

Very magnificent must Carchemish have been when its sculptures were gay with color; when the sunlight glistened on its enameled walls and its somber brick was overlaid with panels of cedar and plates of bronze; when the plumed horses rattled their chariots along its streets, and the great lords, with long embroidered robes and girdles of black and gold, passed in and out of the carved gates of its palaces.

ployer and the men. I was lucky enough at Carchemish to inherit from Hogarth the ideal foreman, Mohammed ibn Sheik Ibrahim, or, as he is generally called, Hamoudi.

HOW HAMOUDI BECAME A FOREMAN

Hogarth had brought with him Gregori, a Cypriote Greek famous among archeologists in the Near East, a foreman of more than fifty years' standing, who had dug in Cyprus and at Knossos, Ephesus, Smyrna, and Egypt. Gregori, enrolling the gang, called in as a none too willing recruit Hamoudi, strong and fierce-looking, with a straggly reddish beard. "Give me red men," said the old Greek, "for such have hot hearts."

A few days later Hogarth and Gregori, watching the men at work, summoned Hamoudi and made him Arab foreman. The other men were furiously jealous, the Turkish inspector not less angry because the choice had been made without reference to himself and he had therefore lost the chance of securing a "rake-off" on the new foreman's pay. So for a time there were plots and cabals which made Hamoudi's life a burden and even induced him to resign.

Hogarth had the Turk removed, and Hamoudi, astonished at getting such support, held to his job and more than made good. He was devoted to Gregori and profited eagerly by the old man's experience. Realizing that a good fore-

XUM

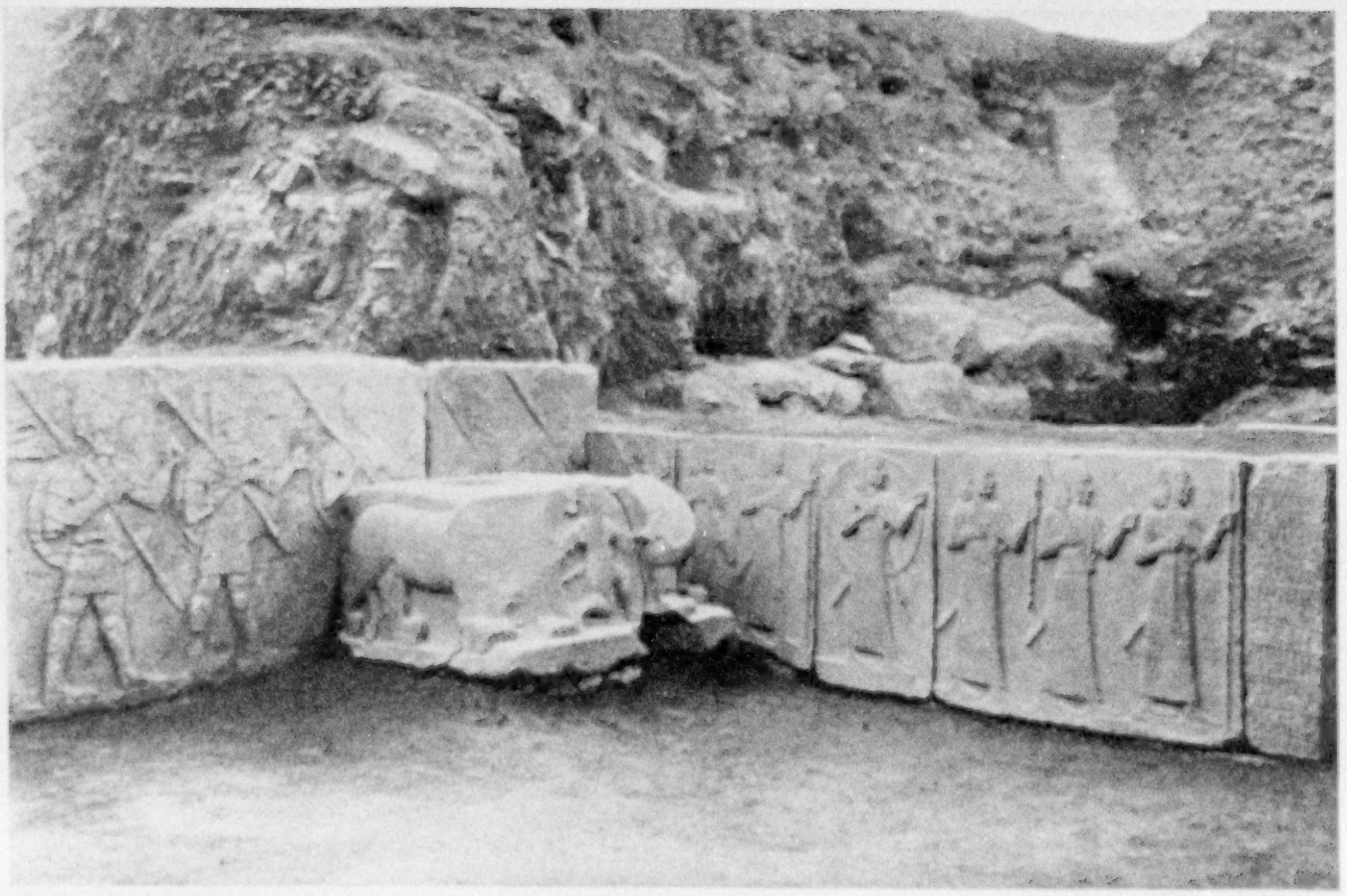
Photograph by Maynard Owen Williams

DELVERS AT WORK ON THE SITE OF CARCHEMISH A FEW WEEKS BEFORE THE WORLD WAR STOPPED THEIR ACTIVITIES

Four hours northeast of Aleppo by way of the Baghdad Railway, on a promontory between the Euphrates and a small tributary stream, is the site of Carchemish, where the record of 4,000 years of history, of sieges, and of changing populations is found in a rubble heap 20 feet thick, and below this extends the record of prehistoric centuries yet to be revealed. Before the author could unearth the Hittite ruins on this spot, he was forced to pry away the débris of the Roman city of Europus.

WHERE THE AUTHOR UNEARTHED THE DRAMATIC RECORD OF A BATTLE WITHOUT QUARTER

In excavating this front door and porch of a villa at Carchemish the archeologist found parts of many weapons of Babylonian and Egyptian origin and other relics proving that the troops of Nebuchadnezzar and those of Pharaoh Necho of Egypt clashed at this spot (see text, page 221).



Photographs by C. Leonard Woolley

SCULPTURED FIGURES FROM HITTITE PALACE WALLS

This Carchemish panel shows the army, headed by seven officers, returning from afield to be welcomed by the king (see illustration, page 215). In the corner is the broken, lion-supported base of a statue to the God Hadad (see page 213).

man ought to be able to read and write, he attended the village school held by the local sheik, disregarding the mockery of the villagers and of the small boys with whom he sat to learn; above all, he recognized the meaning and the value of honesty.

Photograph by Maynard Owen Williams

A KURD PICKMAN WHO UNEARTHED ONE OF THE GREATEST HITTITE FINDS EVER DISCOVERED

AN HONEST MAN IN A LAND HONEYCOMBED WITH CORRUPTION

The East is honeycombed with corruption. A post of authority depends for its worth on the opportunities it gives for making money by bribery and extortion, and while the judge or the governor of a province deals in large sums, the ordinary foreman of a laboring gang is paid to put a man on the work, paid a percentage of his wages to keep him on, paid to let him absent himself without the absence figuring on the muster-roll; and, since he looks for his profits to those under him, he must needs humor them and wink at slackness or bad work.

Hamoudi has never taken a penny from anyone, and this almost unique virtue has not only won him a reputation which has gone far afield, but has given him a moral ascendancy over the men, based partly on respect and partly on genuine affection, which puts him in a class by himself.

In 1912 Hamoudi was only at the start of his career, with much to learn, both on the moral and on the practical side; but he had seen the possibilities of his position and was grimly determined to make the most of them. With him as junior foreman and Gregori as chief, I was well provided; my only English assistant was T. E. Lawrence,* who also had worked for one season under Hogarth.

MEDIATION AND JUSTICE IN CARCHEMISH

Carchemish was in those days a wild country, where every man was more or less a law to himself, and the peaceful occupation of the archeologist was likely to be interrupted rudely at any moment.† Once the village sheik came hurriedly to the dig and, drawing Lawrence aside, begged him to put one Yasin ibn Hussein into a place of safety, as in a few minutes two brothers,

* Afterward to win fame during the World War for his work in organizing the Arabs for their revolt in the desert.—EDITOR.

† I have described some of these interruptions in my book, "Dead Towns and Living Men."

Photograph by C. Leonard Woolley

HAMOUDI AT CARCHEMISH STANDS BY THE GREAT STONE WHICH HE REPLACED IN ITS POSITION (SEE TEXT, PAGE 219)

The Baghdad Railway, begun by the Germans nearly 30 years ago, links Europe to ancient Assyria. Railway trains rumble now past ruined Carchemish, in the land which through the centuries echoed to the tread of Alexander, of invading Egyptians, of iconoclastic Babylonians.

Photograph by Maynard Owen Williams

A GREAT MOMENT IN HITTITE EXCAVATION

When whole rows of inscribed or sculptured slabs of alternate black basalt and white limestone were unearthed at Carchemish, excitement among the Arab diggers rose to frenzy. Volleys of revolver shots would greet such discoveries (see text, page 217).

also workmen of ours, would be after his life.

Yasin was taken up to our house and there an inquiry was held. It appeared that the two brothers, Kurds, had a sister, and that morning before coming to work had discussed the prospect of marrying her to some suitable *parti*. After they had left the house the girl had flung herself on the ground in front of her mother and declared that she would marry Yasin or not marry at all.

So shameless a confession of preference on the part of a girl, who ought not to have any preference at all, was more than sufficient warrant for killing the man — in fact, that was the only way to wipe out the stain on the family honor; and indeed within ten minutes the Kurdish brothers, duly informed by a zealous friend of what had happened, were looking for Yasin, revolver in hand.

It was up to us to maintain peace on the work, but in this case it proved no easy task. The negotiations dragged on spasmodically for three days, and even then the Kurds went back on their word and refused our proposal of a cash settlement, stating that it must have the sanction of the tribal sheik, which we both declared to be wholly irregular. The sheik was called in and agreed with us that he had no right to intervene, but since he was invited to do so he confirmed our judgment and himself kept half of the money allotted to the brothers as a punishment for wrongful appeal!

Photograph by C. Leonard Woolley

THIS HITTITE JINNI STILL HAD POWER TO STRIKE TERROR TO THE MEN WHO DUG HIM UP

"He is the God of Thunder," the whimsical archeologist Lawrence told the Arab workers, in order to make them handle the idol with more care. Even the doubters were frightened into conviction that night when the scientists suddenly set off a flashlight to get a photograph and terrified the superstitious people of Jerablus, the Syrian town on the Euphrates near the site of ancient Carchemish (see text, page 214).

By the gate of one of the palaces of the ancient city we had found a black stone statue of a god seated upon lions. When it was unearthed the lions were intact, but the god lay on the pavement in fragments, and we had spent some time fixing these together with cement. Scarcely had the squat and brutal figure been completed when the sky clouded and a shower began. Fearing for the still wet cement, I told Lawrence to put something over the statue to protect it.

Photograph by C. Leonard Woolley

THIS FRAGMENT REVEALED A WHOLE CHAPTER OF HISTORY

The Ionian shield with Gorgon's head and running animals was dropped by a Greek mercenary in the battle at Carchemish between Nebuchadnezzar and Necho, king of Egypt (see text, page 221).

Lawrence picked out from the heap of men's clothes the richest cloak that he could see and, coming solemnly forward, draped it with great ceremony round the shoulders of the god.

ESTABLISHING THE SUPERHUMAN POWERS OF THE HITTITE "JINNI"

At once the men were on the alert. From the outset they had felt a little bit uneasy about this jinnilike monster that had risen up from the depths of the earth. If the English, who knew so much, paid it such respect, surely it was something more than a block of stone.

Lawrence gathered what was in the men's minds and, since he could never resist the chance of a practical joke, told them, as was probably true, that this was the Hittite version of the Thunder God (the Hadad of the Aramæans) and advised them to keep a lookout on its doings at night.

No villager cared to pass across the ruins of Carchemish after dark, for it was haunted ground, and none would have dared at such a time to come down into the excavated area where stood the sculptured stones; but that night watchers from a safe distance were horrified to see great

Photograph by C. Leonard Woolley

THE ROYAL FAMILY OF CARCHEMISH GOES OUT TO MEET THE VICTORIOUS ARMY

The royal children are represented twice on the same slab: above, they march soberly in procession; in the lower panel they are seen tossing knuckle bones and playing whip-top. The queen or nurse brings up the rear, carrying the baby and leading a pet animal at the end of a string. Even the pet's name is inscribed on the stone above its head. A long and beautifully cut inscription forms the cornerstone at the extreme left (see, also, page 210).

flashes of lightning playing round the pit wherein the God of Thunder sat.

The fact was that the statue was set with its back to the light, and, knowing that it would be difficult to photograph it, we had decided to experiment with magnesium lights after dinner. The photographs were not particularly successful, but Lawrence had triumphantly established the superhuman powers of the Hittite "jinni."

AN ANSWER TO MOHAMMEDAN PRAYER

How credulous these people are might be shown by a story concerning Haj Wahid, my cook and general factotum. It was bitter winter, and for nearly three weeks the snow had lain deep on the ground. All suffered, but the poor Haj most of all, for at mealtimes he had to trudge backward and forward between the kitchen and the living room, carrying his dishes, while the snow trickled into his loose slippers and caked on his chilblained feet.

One day he told me that he was desperate; could stand it no longer. "If the frost does not break tonight," he said, "I shall write to God about it." I asked how the letter would be sent. "Easily enough," was the answer. "You need only running water, and here we have the whole Euphrates; it would get there in no time."

I suggested that Haj Wahid was a very lax Mohammedan and could scarcely expect an answer. "On the contrary," said he, "I never plague Allah with prayers; so when he gets my letter he will know that it is serious and will be glad to do something for my sake, as he was before."

Naturally I asked about that previous occasion, and this is the story, told in all good faith.

Haj Wahid was in the Aleppo jail, condemned to fifteen years' imprisonment for murder. He had served about two years of his sentence, and now his patience was at an end. He chafed at the injustice of his punishment, so disproportionate to an offense admitted, but, in his opinion, very

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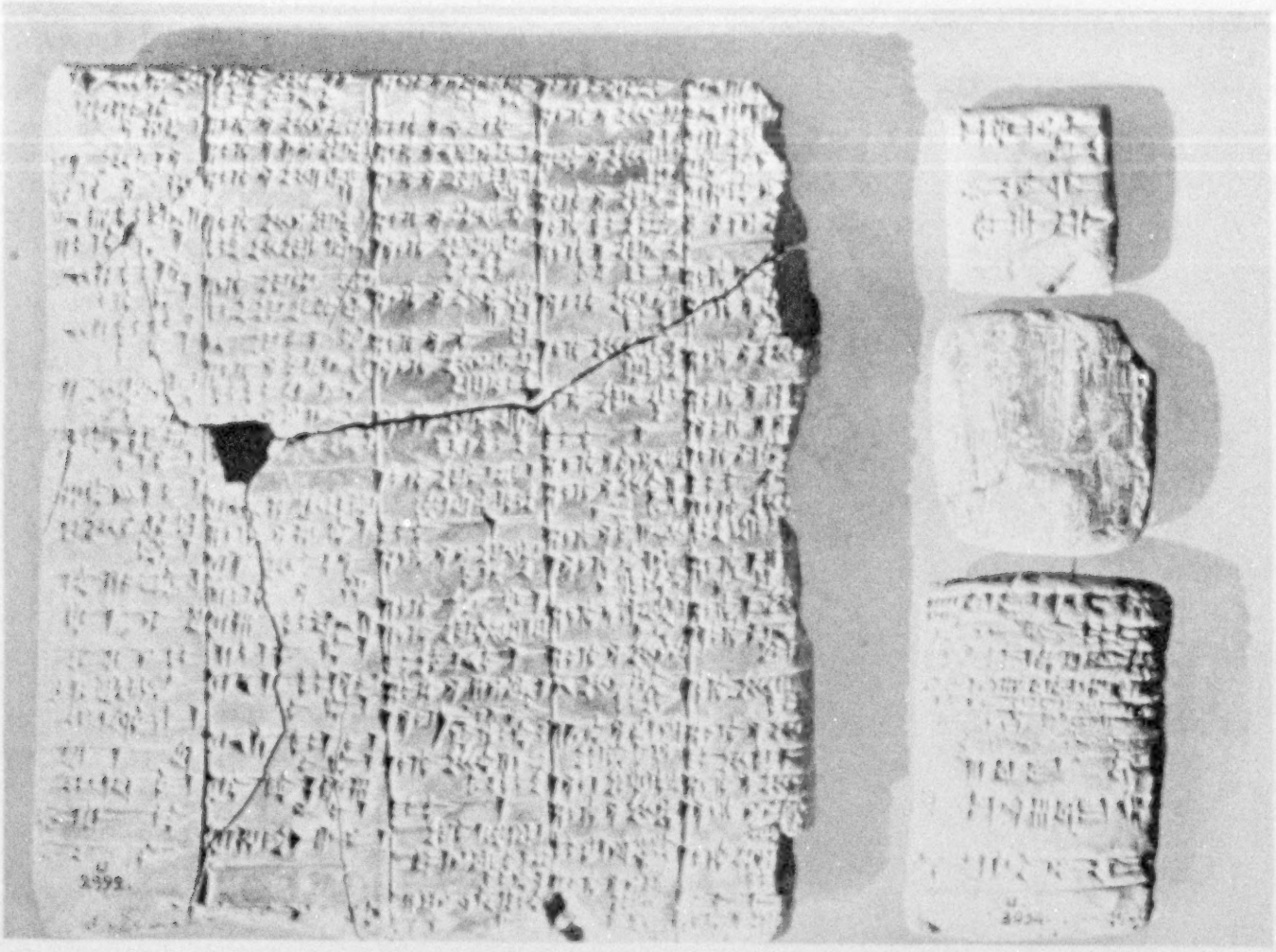
STUDYING AN INSCRIBED CLAY TABLET EXCAVATED ON THE MOUND OF UR

The clay tablets and the big, heavy "written stones," as native diggers call them, are often difficult to move. The tablets, unless well packed, may break; the inscribed wall panels are costly to ship, and it is sometimes difficult to obtain official permits for removing such antiquities from the country where found. To meet these problems, archeologists often make impressions of the ancient writings by the use of wet blotting paper, or even old newspapers soaked in water and reduced to pulp. This wet material is spread over the inscription to be copied, beaten in gently with a small wooden hammer, and then lifted off and carefully dried. Busy with his actual exploration, the scientist digging afield often has little time for laborious translation work; so, by making these paper-pulp facsimilies of his discoveries, he can send them to be deciphered by museum colleagues back home, and so carry on with the field work.

venial. The government provided no food for its prisoners, and, as his friends were growing slack in their ministrations, he was often hungry, and he was a young and active man, to whom confinement was torture. Remembering something he had once heard, he determined to write to God.

A friend who brought him food proved to be a penman and, though incredulous, undertook the task of writing from the Haj's dictation. The letter ran something like this:

"To God, the Great, the Just, the Merciful, from Haj Wahid, blessing and peace.



Photograph by C. Leonard Woolley

THIS LEDGER OF A WEAVING FACTORY IS MORE THAN 4,000 YEARS OLD

In the days when Ur of the Chaldees was a thriving city, the temple of Dublal-Makh operated a weaving factory as a side-line to religion. The large tablet is a month's account, giving the names of the women weavers, the amount of rations allotted to them, the quantity of wool issued to each, and the amount of cloth manufactured. The smaller tablets are receipts drawn up by the temple storekeeper and a voucher for the issuance of stores from the temple supply depot. These records date from 2200 B. C.

After my salutations, know that I have been two years in this gaol and can endure no longer; I shall go mad or I shall die; therefore of Your mercy release me, and that at once. I suffer injustice and there is no man to help me. I take refuge in the mercy of God."

Haj Wahid duly inked his thumb and set his mark at the foot of the letter; it was sealed and addressed, and on his instructions the friend carried it out and threw it into the Kuweik, the little stream that waters Aleppo.

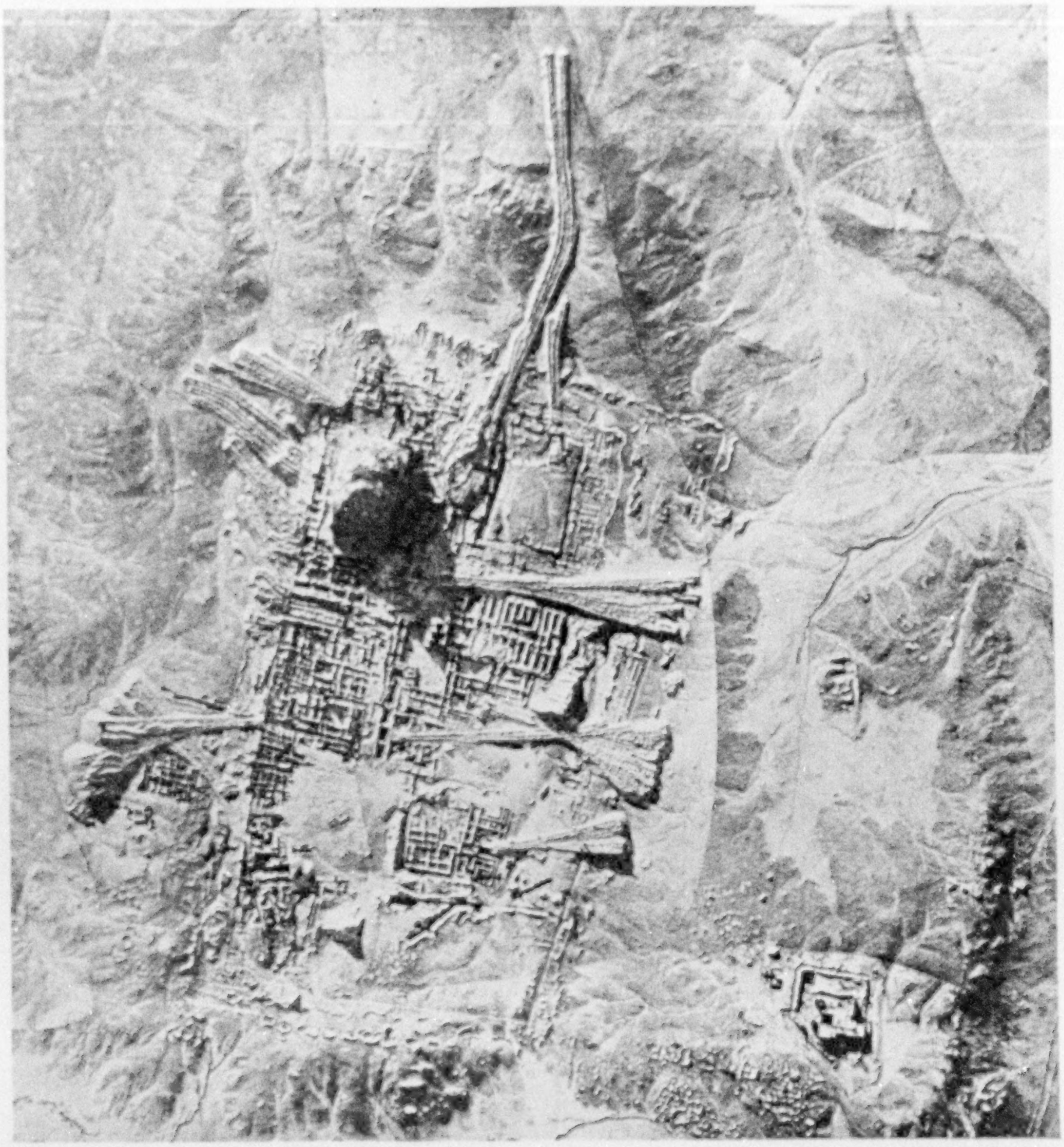
Some three days later a police sergeant entered the prison yard and called for Haj Wahid. He was led out and taken to the room of some government official, who, after satisfying himself as to his identity, informed him that he was free. Without any further questions being asked or reasons given, the prison doors were opened and the Haj walked out and went home.

Naturally he believed that his letter had worked the miracle. Since then he had not troubled Heaven, but now the cold threatened his life and he was prepared to repeat the experiment.

As it happened, however, that night the frost broke and the next morning was warm and sunny; so when the Haj brought in breakfast we chaffed him on there being no need for his letter. He winked. "God is all-knowing," said he. "The threat was enough."

EXCITEMENT RISES TO FRENZY WHEN IMPORTANT FINDS ARE UNEARTHED

There was no lack of small objects at Carchemish, especially when we were dig-



Photograph by Wide World

UR OF THE CHALDEES, AND ITS 5,000-YEAR-OLD SKYSCRAPER, THE TEMPLE OF THE MOON GOD (SEE, ALSO, PAGE 220), SEEN FROM THE AIR

As excavation proceeds, débris is hauled away on light trams to dumps, appearing as fanlike areas outside the walls. One line (top) runs a long way to avoid dumping on unexcavated ruins. The Temenos, or holy area of Ur, as shown here, was the center of city life, and so is most interesting to the digger. Here was found one of the oldest dated stones known to archeology.

ging graves, but inside the city the finest things were the inscribed and sculptured stones which formed friezes along the base of the palace walls.*

It is always exciting to unearth a big piece of sculpture, but here, besides isolated blocks, there would be whole rows of slabs, usually of black basalt and white limestone alternately, one touching another all along the building's front, and excitement would rise to a frenzy as the series prolonged itself and the edge of yet another carving showed up from the loosened soil. Volleys of revolver shots would greet such a discovery, the number of

*These were all left by us in position and made of the Carchemish ruins one of the most imposing monuments of the Near East. They survived almost without damage the war of 1914-1918, but since the Turkish reoccupation of the site, in the summer of 1920, many of them have disappeared.

shots being in strict proportion to the importance of the stone, and the sculpture would ever afterwards be known by the name of its finder — "Mustapha's bulls," "the lion of Hassan Ibrahim" — and the pride of ownership and the credit of so many shots in his honor was for the pickman an extra incentive to good work.

HAMOUDI'S TRIUMPH

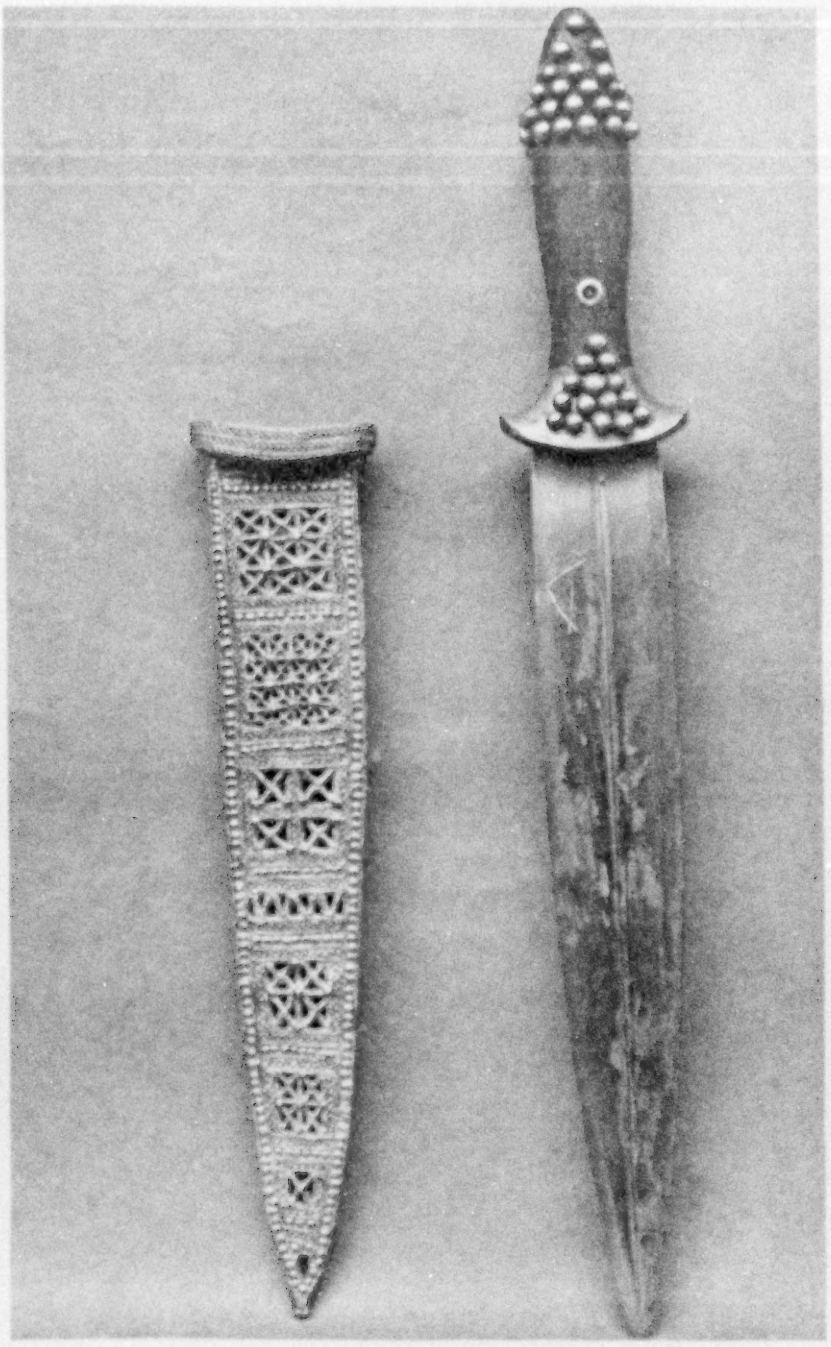
Of course, it required no skill to find a big stone; skill came in rather with the tracing of mud brick walls buried in mud brick débris, and at this work our men became wonderfully adept. From the beginning, Hamoudi specialized in this branch, while Gregori dealt with the stones, the shifting of great Roman blocks that encumbered the site, and the setting up of fallen Hittite slabs; but Hamoudi was learning all the time, and I think that the proudest moment of his life came in 1920, when the old Greek was no longer at Carchemish. I asked him if he could put up in place a stone from the South Gate.

It was not a very thick slab, but it was some fifteen feet long and seven feet high; it lay fallen in the roadway, and had to be moved for a little distance; then lifted onto the top of a low wall and aligned exactly with the wall face.

Our steel tripod and pulley had already buckled under its weight, and two stout poles, crowbars, and a rope were all the equipment available for the task; but Hamoudi said that he could do it if only I would keep away, for if watched he might grow nervous and kill some one. I gave him the eight men he asked for and retired, though not so far that I could not keep an eye on what went on.

Hamoudi used the arts the Greek had taught him: gentle leverage, now at this point, now at that; a small stone here to act as a pivot, a larger there; no hurry and as little force as might be, but the stone's own weight turned to account, so that it seemed to shift and lift itself. In twenty-two minutes the block was in position on the wall and the eight men sat down to smoke (see page 212). One of them, a sea lawyer and a born rebel against authority, turned to the foreman. "W'Allah!" he said. "By God, Hamoudi, to-day for the first time I do not regret Gregori."

Apart from the sculptured slabs which were the glory of the site, one of the most striking discoveries was made in a house which lay in the outer town, between the



Photograph by C. Leonard Woolley

THE GOLD DAGGER OF UR (SEE PAGE 222)

Photograph by Wide World

FROM UR OF THE CHALDEES ABRAHAM SET FORTH TO GO INTO THE LAND OF CANAAN

The Ziggurat (the lofty pyramidal structure) of Ur of the Chaldees, dedicated to the Moon God, which dates back 3,000 years before Christ, and the excavations which are being carried on by the British Museum and the University of Pennsylvania, as seen from an airplane (see, also, illustration, page 218).

old earth ramparts, dating from soon after 2000 B. C., and the stone walls which had inclosed the new residential quarters, added in the prosperous days of the Late Hittite Empire, perhaps about 1000 B. C.

The cutting made for the Baghdad Railway had exposed a wall of finely trimmed limestone blocks. Starting from the edge of the cutting, we soon brought to light the ruins of a large private house, a building whose ground plan was not unlike that of a modern suburban villa, even to the detail of the front door with its roofed porch, approached by a flight of stone steps (see illustration, page 210).

THE STORY OF TWO NATIONS IS READ IN THE ASHES OF A VILLA

It was clear from the outset that the house belonged to the last days of the city's existence, to the time when, according to the writers of the Old Testament, Pharaoh Necho, King of Egypt, went up to Carchemish, which is beside Euphrates, to do battle with Nebuchadnezzar, and was defeated there in 604 B. C. As work went on inside the house, proof came in a dramatic fashion.

The floor was covered with a thick layer of ashes, and in the ashes lay hundreds of bronze arrowheads, lance-points, and fragments of broken swords. The weapons were most numerous near the doors of the rooms, and here, in the thresholds, one would find the arrowheads bent by the force with which they had struck the stone jambs or the metal binding of the doors. Evidently a desperate fight had been waged from room to room, the defenders gradually weakening, until at last the house had been fired over their heads.

Then other objects turned up to throw light upon the causes of the struggle.

First there was a clay tablet written in Assyrian and giving instructions for the collecting of taxes on various imports; it dated from shortly before 610 B. C. and witnessed the vassalage of Carchemish to the Assyrian king.

Then came bronze figures of Egyptian gods and one bronze which, though it represented Osiris, was manifestly a local copy of an Egyptian original; this could only mean the spread of Egyptian influence into Assyrian territory. A bronze ring with the cartouche of Psammetichus, the father of Necho, carried us a step further—a definite intrigue with Pharaoh must have been going on for a generation at least before the final battle.

Then, hardened by the fire which had destroyed the papyrus roll to which they had been attached, there were clay seals impressed with the name of Necho himself, and the whole story lay before us, from when disloyalty first raised its head to the day when Pharaoh marched north to the support of the rebels, and Nebuchadnezzar, as heir to the Assyrian Empire, made good his claim by fire and sword.

One object still awaited explanation. Among the weapons were the fragments of a broken shield covered with a thin plate of bronze decorated with repoussé designs (see illustration, page 214). In the center was a Gorgon's head, and round this, in concentric circles, running animals, horses and dogs, deer and rabbits. What was remarkable was that the style was neither Egyptian nor Mesopotamian, but Greek, the work of a craftsman in some Ionian city, such as Ephesus or Smyrna. And how did this come to Carchemish?

Suddenly I remembered that Herodotus, describing Apollo's Temple at Branchidæ, near Ephesus, mentions offerings dedicated there from the spoils of Gaza, in southern Palestine, by Necho, who, like his father, made use of Ionian mercenaries in his army. The capture of Gaza took place in the campaign before the battle of Carchemish, and the shield must have belonged to one of those Greek "Free Companions," who died far from home, by the waters of Euphrates.

So in one Hittite house the Greek historian and the Hebrew prophet met together, and we could see Carchemish in its latter days, like Jerusalem, wavering between Egypt and Assyria, leaning at last upon the broken reed of the Nile, until came the crash of arms, flames licking the rafters, and the stillness of a dead city.

MIDNIGHT ROBBERY INAUGURATED THE WORK AT UR

Compared to Carchemish, Ur has proved a peaceful enough spot, though it did not appear so at the beginning. On the second night of our first season there our camp of tents, pitched close to the old town wall, was raided.

We were unarmed. The tribal sheik had provided guards, but had sent them without rifles, hoping to bluff us into

Photograph by C. Leonard Woolley

WORKMEN DIGGING OUT PREHISTORIC GRAVES AT UR

In the deep hole at the extreme left the gold dagger (see illustration, page 219) was found eighteen feet below the level of the ground. During the past winter the author discovered at Ur a group of royal tombs which are remarkable not only for their contents, but for the light which they throw on Sumerian funeral customs unguessed hitherto. In one tomb were unearthed three skulls, probably those of a king and his personal attendants, and in the grave shaft were 60 bodies of the victims killed in the king's honor.

supplying them; so when, at midnight, half a dozen men from the wall mounds emptied their magazines into the tents we could do nothing.

It was humiliating to stand by and watch the robbers make their way under the canvas, yelling, "*Bug! bug!*" (Steal, steal!), and emerge with our suitcases.

It was only after they had gone that I found the attack had been more serious than I had supposed, and that one of the guards had been killed. Standing in the full moonlight, he had called out, "I know you!" and to avoid detection one of the thieves had shot him through the chest. Actually it was the stupidest thing he could have done, for the dead man was a cousin of the sheik, and therefore it became the duty of the whole tribe to avenge the murder.

Things got too hot for the robbers, who at last flung themselves on the mercy of the sheik. That astute man compounded for the murder of his kinsman according to tribal custom, receiving a goodly sum of money, and then handed the six over to the police for robbing Englishmen, an offense with which the tribal court was not competent to deal.

In the end I recovered my clothes, not much the worse for being buried three days in the sand, and Sidney Smith his gramophone, though that they had pulled apart, thinking it a money-box; and so salutary was the lesson that we have never since had any trouble.

In this part of Iraq the Arabs are too poor to have quite the independence of spirit which characterized our Carchemish gang, but they are good fellows, with a sufficient sense of dignity, intelligent, and excellent workers.

Hamoudi established his ascendancy over them from the outset, but the teaching of them was hard work. He would himself lay bare a face of mud brick and then, handing the entrenchment tool over to the head of the little working gang, would tell him to follow up the wall.

"What is a wall?"

"A wall? What is a wall? Is the man mad? A wall like this, like that of any house built with bricks. Are there not bricks? Is not this a brick, and that?"

"What is a brick?"

And the men really did not know, for living in a mat shelter or, at best, in a hovel of reeds and daub, they had never come across bricks or proper walls, nor could they recognize the simplest thing that lay outside the narrow circle of their experience. For a long time a photograph would puzzle them completely, and they could not tell whether it represented a building or a man, so unused were they to pictures of any sort.

"HAD TO MEND MY WIFE'S TROUSERS," SAYS TARDY WORKMAN

Perhaps for this very reason, that the whole thing was unintelligible, they were not surprised that my wife should make the drawings of the objects. What did surprise them was that she, a woman, knew how to sew, for with them that is a man's prerogative, and I have had a late-comer to the work excuse himself with the plea that he had stopped at home to mend his wife's trousers!

A visitor one day asked two small girls who were loitering near the house whether they had ever been to school. They denied it almost indignantly, and then, as if up in arms for the credit of their sex, added with pride, "But the lady can both read and write." Not one of the men they knew could do as much.

When first we went to Carchemish the villagers there had no measure of time shorter than a day, and no measure of distance more accurate than the number of cigarettes a man might smoke while walking. I have seen a boy, confronted with the task of counting up to double figures, start on his fingers, and when those were exhausted solemnly sit down, take off his slippers, and continue the sum on his toes. At Ur they were scarcely, if at all, more sophisticated, and yet out of such had skilled diggers to be made.

For a month or more Hamoudi went to bed each night with a splitting headache, but he never lost heart or temper. He would encourage and cajole, mock and curse (but the curses always ended in laughter), drive the stupid to work till they dropped, and mark down the more teachable and spend infinite patience on their instruction. Once, when some waxed insolent, he endured it till the luncheon hour, and then challenged the strongest to a friendly wrestling bout, and in less than a minute had flung him insensible to the ground.

He would fine the slack, but they soon found out that the fines did not go into his

Photograph by C. Leonard Woolley

A TEMPLE KITCHEN OF ABRAHAM'S TIME

When the temple called Gig-Par-Ku was excavated at Ur this kitchen was exposed. To show how, in the long ago, its equivalent was used, Arab workmen were posed and photographed. In the foreground is a well and water tank; at the left a fireplace for boiling water; at center back the chopping block; in the background a cooking range in an inner kitchen, and at the right a man grinding corn in the ancient quern (see text below). Because the Arab at the extreme left forgot to pour water from the jug, as he had been told to do, he insisted that the picture must be taken again.

own pocket, and that no personal friendship secured a man from punishment; so they respected him the more. In a marvelously short time we had a gang of which we could be proud and which was proud of itself. "You can thank the English for this," I once heard Hamoudi tell them. "You were wild beasts, and now you are men."

Naturally, money is their first consideration, their wages and the baksheesh that luck may bring ("Allah is merciful!"), and the desire to stand well with their employers may account for some of the keenness that they show; but there is, too, a genuine interest in what they are doing.

The more intelligent will inquire about names and dates, will discuss between themselves the uses of the objects they dig up, can even recognize some of the commoner inscriptions on bricks or door sockets and identify the kings.

A gang had been told to dig down through the brickwork of the corner of a ruined building on the chance of finding a foundation deposit; they had gone below foundation level without discovering anything, and I was about to call them off when the pickman of another gang strolled up and intervened.

"Look again," he said, "for you are not quite in the right place. Three years ago I found the box with the copper statue under just such a corner as this, but I measured the distance from the two walls; it was so much and so much, and if there is a box here, too, it should be farther in than you have dug."

I remarked on his good memory. "Of course," he replied airily, "you have much to think about and cannot remember all these little things; but that is my work."

We had cleared the kitchen of the temple Gig-Par-Ku, and the whole thing, dating from the time of Abraham, was so

Photograph by C. Leonard Woolley

UNEARTHING THE GORGEOUS TRAPPINGS OF A PREHISTORIC QUEEN AT UR

Imbedded in hard soil were these small gold lion heads with manes of lapis lazuli and shell inlay which adorned a royal chariot.

astonishingly well preserved that we told the men to light fires in the old cooking ranges, to grind corn in the querns, cut up meat on the brick chopping block, and draw water from the well, so that we might photograph the scene almost as it was when the temple yet stood (see illustration, page 224).

The exposure had been made and the men ordered to fall out when from one of them there came a cry of dismay. His duty had been to pour water from a clay vessel into the cistern, and at the moment when the snap was taken he had not started to pour. The photograph, he protested, must be taken again. We told him that it did not greatly matter; probably the water would not show in any case; but he was not to be put off by any such specious reason; the thing ought to be correct and it was not; it would be bad work unless we repeated the photograph.

It is no use to upset ideals, and we were obliged to regroup the men and make another exposure, giving due warning, so that the water might be poured in time!

It is not often that anything in the nature of a reconstruction can be got with the camera; usually such have to be worked out on paper in the drawing office. In the early days of the dig we could scarcely attempt this, because not enough was known about the architecture of ancient Sumer to warrant the restoration of buildings whereof little more than the ground plan was certain; but now evidence has accrued from all sorts of sources, and not the least engrossing part of our work is the piecing together of scattered clues and working out from them the original appearance of house or temple.

THE GRAVEYARD OF A VANISHED CIVILIZATION

To our Arabs the finished results appeal strongly; they pore over the architect's drawings, delighted to see what the city looked like in the days of Abraham, Nebi Khalil, whose father, according to their tradition, was a maker of images at Ur.

Now the temples and the houses are sorry ruins, most of them shrouded beneath mounds littered with broken bricks

Photograph by C. Leonard Woolley

BRUSHING OFF A CLAY TABLET FOUND AT UR

The archeologist is taking tablets from under the wide floor of the archive-keeper in a house in the temple of Dublal-Makh (see, also, illustration, page 217).

and shards of pottery. Only the great staged tower built by King Ur-Nammu four hundred years before Abraham was born still lifts its huge bulk sixty feet into the air and dominates this graveyard of a vanished civilization (pages 218, 220).

Our business is to call back the life that was, and already, after five seasons of work, we can do much.

It would be easy, did space allow, to describe here the great tower as it stood in its prime, with the gorgeous processions of the Moon God's priests going up and down its triple stairway and across its tree-set terraces to the jeweled sanctuary that crowned it, a not unworthy rival to the Tower of Babel which was at Babylon, the counterpart of Ur-Nammu's Ziggurat at Ur; easy to picture the great courtyard at the tower's foot, to which men brought their tithes and offerings to the god; the donkeys laden with grain sacks, with jars of oil and cheeses, droves of sheep and goats, the temple servants weighing the roped wool bales, the scribes noting all on their tablets of damp clay and handing out formal receipts to the clamoring peasants.

We could pass on to the temples, to note their architecture and to watch the ritual of their ministering priests, or to see the temple women at work in the factories, spinning thread and weaving cloth, while the overseers called the roll and issued rations to the workers; or we could describe how men lived in Abraham's time in two-storied brick houses with wooden galleries and private chapels for domestic worship.

We could go back another fifteen hundred years, to 3500 B. C., and tell of the exquisitely worked treasures in gold and silver, shell and lapis lazuli, that enrich the earliest known graves of Mesopotamia and have reorientated our ideas of the beginnings of civilization. But here I have preferred to deal less with the results of excavation than with one of its side aspects, with the characters and foibles of the Arabs who at Carchemish and Ur have done the spadework of archeology.

The story of the past which they have helped to lay bare would fill volumes; they themselves deserve at least these few pages.

A WOMAN'S WINTER ON SPITSBERGEN

By Martha Phillips Gilson

THE opportunity to winter on Spitsbergen does not knock at everyone's door, nor would many people open the door if it did; but when the chance came to me to spend the long Arctic night on that barren island I grasped it with both hands, so to speak, knowing it was one of the experiences I wanted in my bag of memories.

I had accompanied my husband from America with the idea of spending the summer on Spitsbergen and returning home alone late in the fall. But as the days wore on and the light nights began to darken, and Nature stood out so clear, with no fripperies of life to distract one's attention from her, I realized what a wonderful opportunity I had to stay and see what the long, dark Arctic night was like.

The stories of the Eskimos living in their ice huts and burning whale oil and wearing furs all through the long winter months had always interested me; but they sounded more like fairy stories than accounts of real life. Now, here was my chance to equal, or even outdo, the Eskimos.

The only people living the year round on Spitsbergen are those employed by the different mining concerns, those who operate the wireless station maintained by the Norwegian Government, and an occasional trapper or fisherman.

MAGIC PICTURES OF MOUNTAIN, ICE, AND WATER

Two thirds of West Spitsbergen's (the largest island in the archipelago) 15,200 square miles is ice-covered throughout the year. There are flowers and mosses in sheltered sections, but no trees or shrubby growths of any kind, so that the landscape has a cold and inhospitable appearance; but the mountains and glaciers and water combine to make a series of magic pictures.

As we neared our destination after a five-day voyage in a small boat built for the Arctic waters, I was struck by the grandeur of the scenery. Owing to the clearness of the atmosphere, we could see great distances, and our first glimpse of the island came when we were many miles away. Lofty mountains with snow-covered tops and glaciers between, all touched with brilliant sunlight, rose out of the water. The mountains were a deep blue and the snow such a pure white that it was dazzling.

This was Spitsbergen, at the top of the world. Iceland and Alaska were far to the south of us. Most of Greenland and all the cold countries I had ever heard of were south of us. We were 78° N., and the North Pole only 12° away. What kind of country was this and how did people live on such a place?

It was the third of August and the sun was high in the heavens during the full 24 hours of the day. Cold as I was, I found it hard to go below; I wanted to stand on deck and gaze at Spitsbergen.

SAILING POLEWARD IN A WOODEN TUB

The trip up from Norway had been a hard one and I was ready for a hot bath, a soft bed, and all the comforts of a normal life. I felt they were due me. We were aboard an unpretentious craft. She was wooden and built for the Arctic and ice conditions. The sharp-nosed steel boats are very dangerous in the ice, as they are far more likely to be damaged than wooden vessels.

I shall never forget my astonishment and horror when I first saw the boat on which we were to sail from Norway to Spitsbergen. My husband took me down to the dock in Tromsö and, pointing to a small wooden tub of 100 tons, said: "There she is; we are to sail on Monday."

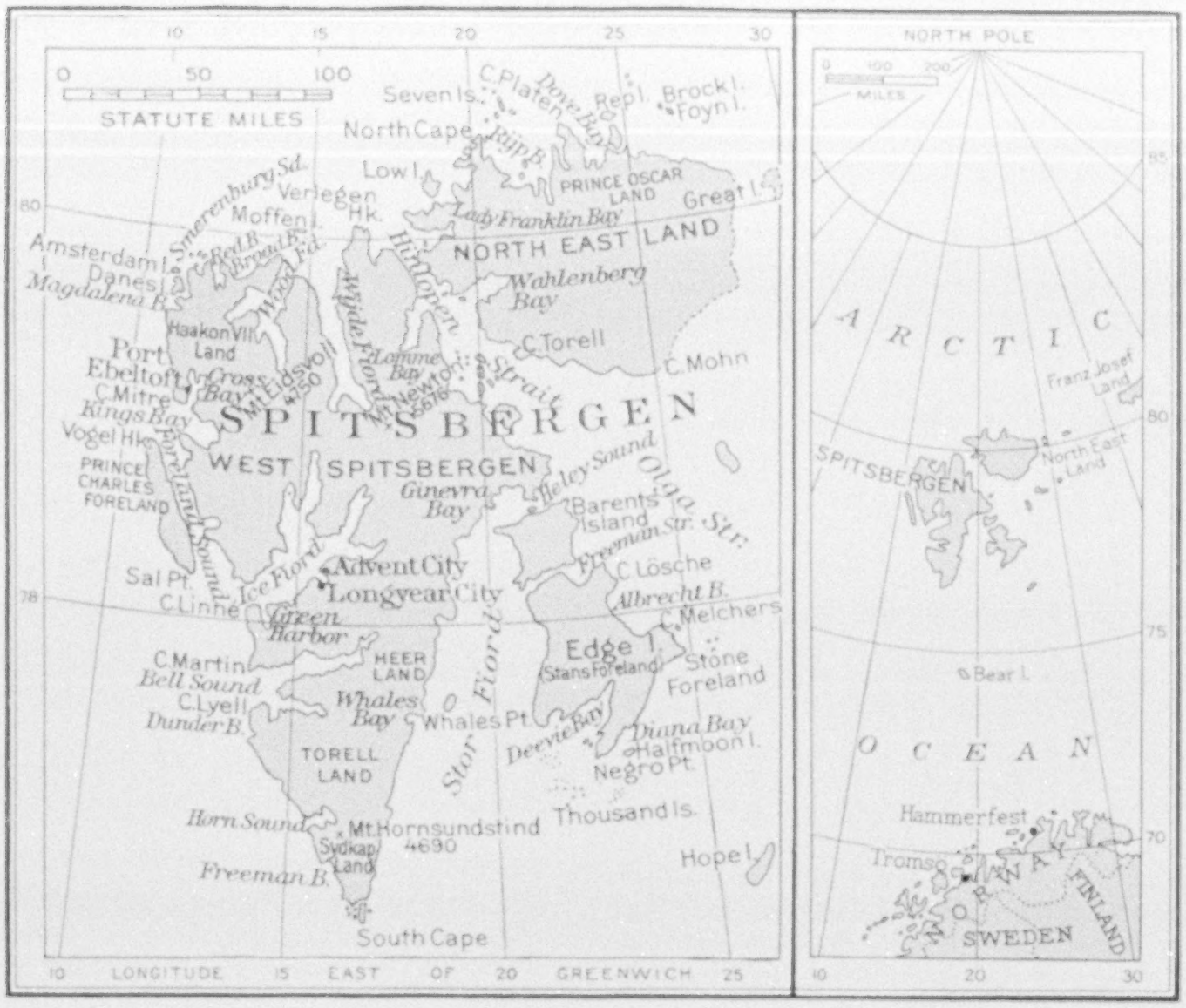
I took a look at the little boat, bobbing and rolling at anchor in the harbor, and then looked around at the rest of the shipping. Seeing nothing that looked big and solid and strong enough to travel almost to the North Pole in, I asked him where the real boat was.

"What boat?"

I told him I meant the boat on which we were to sail.

He answered, "Why, there. I just pointed her out to you."

Then it dawned on me. I had thought



A MAP OF SPITSBERGEN

This Arctic archipelago, lying about 360 miles from Norway, consists of five large islands, with numerous smaller ones. It covers a total area of 25,000 square miles. The smaller map (right) shows its geographical relation to northwestern Europe and the North Pole. Spitsbergen's permanent population is small, but some of its coal-mining camps are inhabited the year round. The largest is Longyear City, where the author wintered. The archipelago has figured prominently of late in news items, owing to the disaster to the Italian dirigible *Italia* off the coast of North East Land, near Cape Leigh Smith. Many names of note, many nations, have struggled and suffered, with this inhospitable island group as a base, to increase our knowledge of polar geography. This goodly company includes Horatio Nelson, hero of Trafalgar, who served as midshipman on an expedition in 1773 and was nearly killed by a bear. Almost 100 years later the reindeer of the Nordenskjöld party, with which it hoped to advance toward the Pole in sledges, escaped in a snowstorm. The air heroes include the ill-fated Andrée, the originator of polar exploration by air; Wellman (see page 242), Byrd and Bennett, Amundsen, Ellsworth, and Nobile.

I was looking at the ship's tender! So that was the *Isfjord*, on which I was to sail away from friendly Norway and up into the Arctic!

I had another shock when I went aboard. The *Isfjord* had a small deck aft. The railing did not reach to my waist. "Very dangerous in rough weather," I thought. The deck was littered with stuff peculiar to a boat of her type.

A short ladder led to the boat deck; no railing on that deck; just the rigging and the lifeboats swung out in their davits between me and the ocean. There was not a deck chair anywhere on the boat.

My husband had told me I would find no comforts aboard, but I had not thought things could be quite so bad. In after years, as I became hardened to travel in the Arctic, it had no terrors for me—only thrills—but the first sight of that boat will always stand out in my memory as a thing of horror.

We stepped back on the aft deck and entered the tiny saloon by way of four or five narrow, ladderlike steps. Our cabin,

which was off this small saloon, consisted of one very narrow berth on top of several tiers of drawers. I could see plainly I should have literally to "climb into bed."

The cabin was long and narrow, with one porthole at the end, opening out directly in line with the steersman at the wheel. As there was not the sign of a curtain, we immediately hunted up two tacks and, tying a string across, used a piece of paper for a curtain. We looked in vain for any toilet accommodations worthy the name, and then knew for a certainty that ladies were not expected to travel on boats of this type.

Photograph from Martha Phillips Gilson

BOUND FOR "THE COLD COAST"

The *Isfjord*, the uncomfortable, 100-ton vessel which the author mistook for the ship's tender (see text, page 227), formerly belonged to the Duc d'Orléans, and was used for exploration work. When Norway formally took possession of Spitsbergen, in 1925, she gave her new province the old name, Svalbard—The Cold Coast. Her claims to it were based on a probable Norwegian discovery in 1194, more than 400 years before the recognized discovery made by Barents (see page 231).

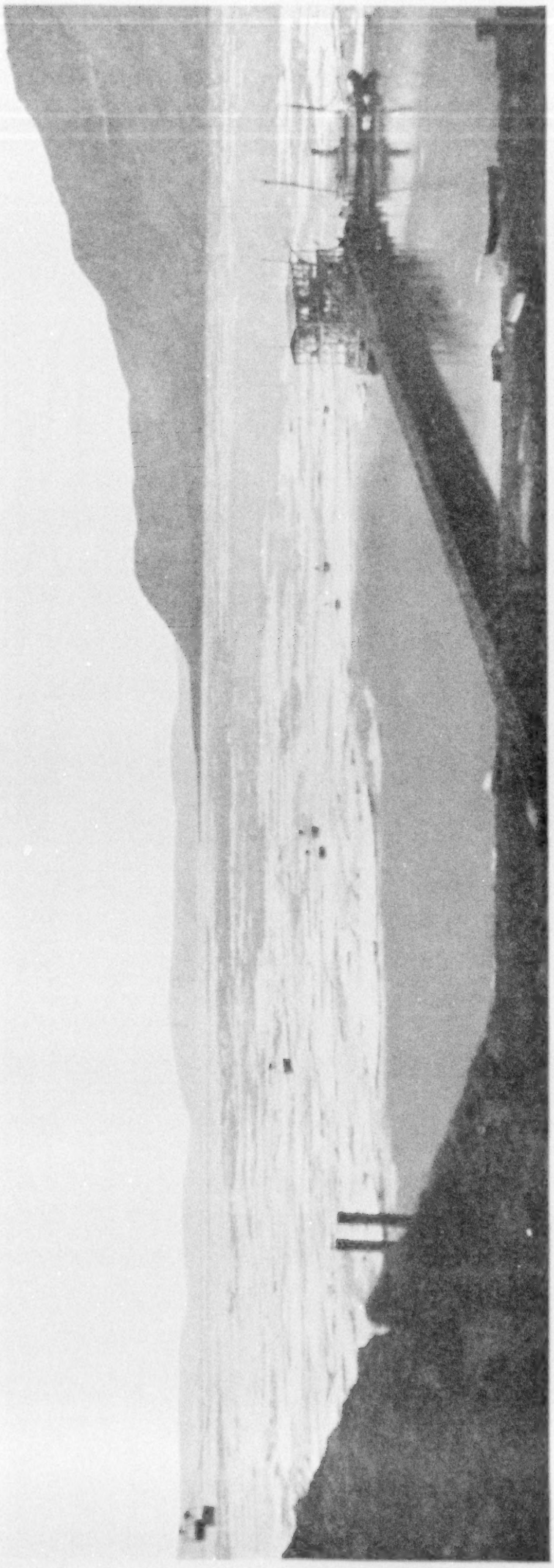
BATTLING THE ICE PACK FOR EIGHTEEN HOURS

The first three days at sea were terrible. The rolling of that little boat was indescribable. There were no sides to my berth, and I had all I could do to keep from being pitched on to the floor by day and on my husband, who slept on a mattress on the floor, by night.

The third day out we entered the ice pack and had to lay to for a few hours. I dressed and went on deck. All around us, as far as the eye could see, was ice—large, flat cakes and huge icebergs. Many of the latter were beautiful and of fantastic shape. Some looked like medieval castles, others had great, deep-blue caverns.

The sunlight on all that ice was blinding. There was not a dark spot on the horizon. When the wind shifted and opened lanes in the ice pack an experienced ice pilot went up in the crow's nest and threaded us through. On seeing a spot of clear water ahead he would call down, "Left" or "Right," as the case might be. The steersman would repeat the order and turn the wheel as directed. The little boat would push ahead, bump any ice that lay in her pathway, ride up on the cakes not pushed aside, and with a grinding noise either break through or slide off.

It was all very exciting to me, but I



Photograph from Martha Phillips Gilson

PACK ICE IN ADVENT BAY IN AUGUST

Spitsbergen has a very short summer season, when open water can be expected. In some years ice conditions are so unfavorable that no ships can enter the bays until August. The last boats out for Norway should leave by the first of October, at the beginning of the dark season, else they run the risk of being frozen in for the long winter (see, also, text, page 233). Mountains in the background are 40 miles distant.

could not stay on deck very long at a time because of the intense cold and the blinding light. My husband brought up from below the two wicker chairs we were taking to camp and we had tea served on deck.

We were in the ice pack for 18 hours, which was a relief after the rolling and tossing on the open sea. As we sailed up the west coast of Spitsbergen the water cleared, except for a few bergs here and there.

We were struck by the barrenness of the land. The mountains were only that deep, wonderful blue at a distance; close up they were brown, with not a sign of vegetation—just brown rock, with here and there a touch of snow. It was 10 o'clock at night and the sun was shining brightly.

As we neared the dock at Longyear City (see map, page 228), we could make out the figures of people moving to and fro. Smoke and steam showed that man was making himself at home and carrying on his activities here on Spitsbergen as elsewhere.

We were welcomed most hospitably by the staff and given the best there was at the mining camp. But that best did not mean a hot bath or a soft bed. I bathed that night in a small enameled basin in an iron stand, with water heated on the small cookstove in our cabin, and lay awake for hours on a very hard bed.

I would pull the curtain aside and stare out

MNXUM

Photograph by Oscar Halldin

FOR YEARS A NO MAN'S LAND OF THE FAR NORTH; NOW A VALUED COAL MINE AND POLAR AIR STATION

Questing for a new route to Cathay and the Spice Islands which should be free of Portuguese control, Williams Barents and Jacob Heemskerk, in 1596, forced their toy ships through Arctic ice and saw parts of the west and north coasts of a high, snow-covered country. "The land," wrote Barents in his log, "consisted only of mountains and pointed hills, for which reason we gave it the name Spitsbergen." It was at first believed to be a part of Greenland and was subsequently claimed by Denmark. Then it was found to be an independent island and was formally annexed by England in 1614. Of late years the group was a bone of contention; Norway, Sweden, and Russia claimed it. Norway finally received it by a treaty signed at Paris in 1920. Official possession was taken five years later. Safe Harbor, an inlet of Ice Fiord, seen from the top of Värmland Range. Kjerulf Glacier to the right.

Photograph by Martha Phillips Gilson

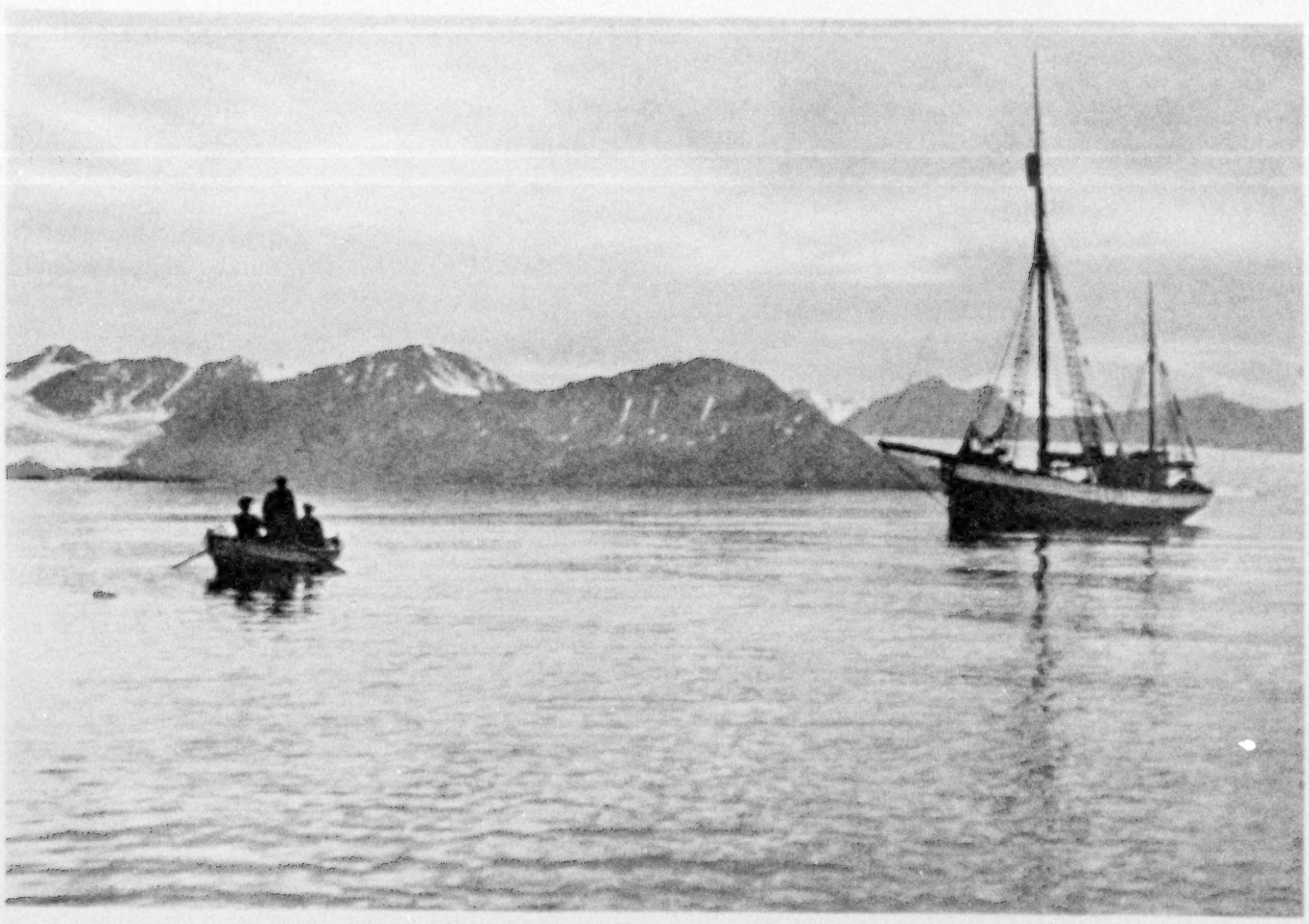
THE NORTHERNMOST "CITY" IN THE WORLD

There are a few more northerly settlements in Spitsbergen, but Longyear City is the only one of any size. Isolated during the long, ice-bound winter months, when there are no mails or fresh food, it livens up in the summer, when tourist boats, yachts, colliers, and other craft bring visitors and workers. The white marks on the hillside are the supports for the aërial tramway (see pages 236 and 239).

Photograph from Martha Phillips Gilson

WHERE THE AUTHOR OVERWINTERED ON ADVENT BAY

When she remarked to her husband that this was not much of a home in which to start housekeeping, he replied, "Oh! I don't know. It is the best house on the best street in town" (see, also, text, page 235).



Photograph by Martha Phillips Gilson

WELCOME HOME!

The writer's husband arrives at Recherche Bay after a prospecting expedition. Photograph taken at 10:30 p. m. (see, also, page 243).

at the brown mountains across the calm, peaceful bay and comfort myself by thinking, "All this strangeness will soon wear off, and this view will become as familiar as the one I left behind me in beautiful New England."

My husband and I were the only Americans at the camp. All the other members of the staff were Norwegians, but most of them could speak English. There were no women. If I were to have companionship at all, it must be that of men.

I was very young, just twenty, and had never been so far away from home before. I had not known the man to whom I was now married eight months ago. It was all very strange. Even Nature was strange, with her 24 hours of daylight. But youth is adaptable and I soon began to feel as if I had always lived on Spitsbergen.

Some of the miners had their wives and children with them, but they were mostly of the peasant type and did not speak a word of English.

The camp consisted of a staff house, hospital, office, small four-room bungalow where we lived, store and warehouse, and quarters for the men. All these buildings were strung out in a narrow valley between two mountains which terminated in two glaciers a short distance above the camp.

COAL MINED IN WINTER IS SHIPPED IN SUMMER

The powerhouse and large warehouses were nearer the dock, about a mile from camp, and the coal mine was in the mountain back of the camp. Operations were carried on all winter and the coal conveyed by aërial tramway from the mine and stored in a large stock pile near the dock, for shipment the following summer. Our entire winter colony numbered about 250 persons (see page 239).

Spitsbergen has a very short summer season, when open water can be expected. During July, August, and September the loading of coalboats goes on continuously. Some years ice conditions are very unfavorable. Seasons have been known when no ships entered the bays until August, and the last boats out should leave by the first of October, when the dark season is beginning. After that they run the risk

Photograph by Martha Phillips Gilson

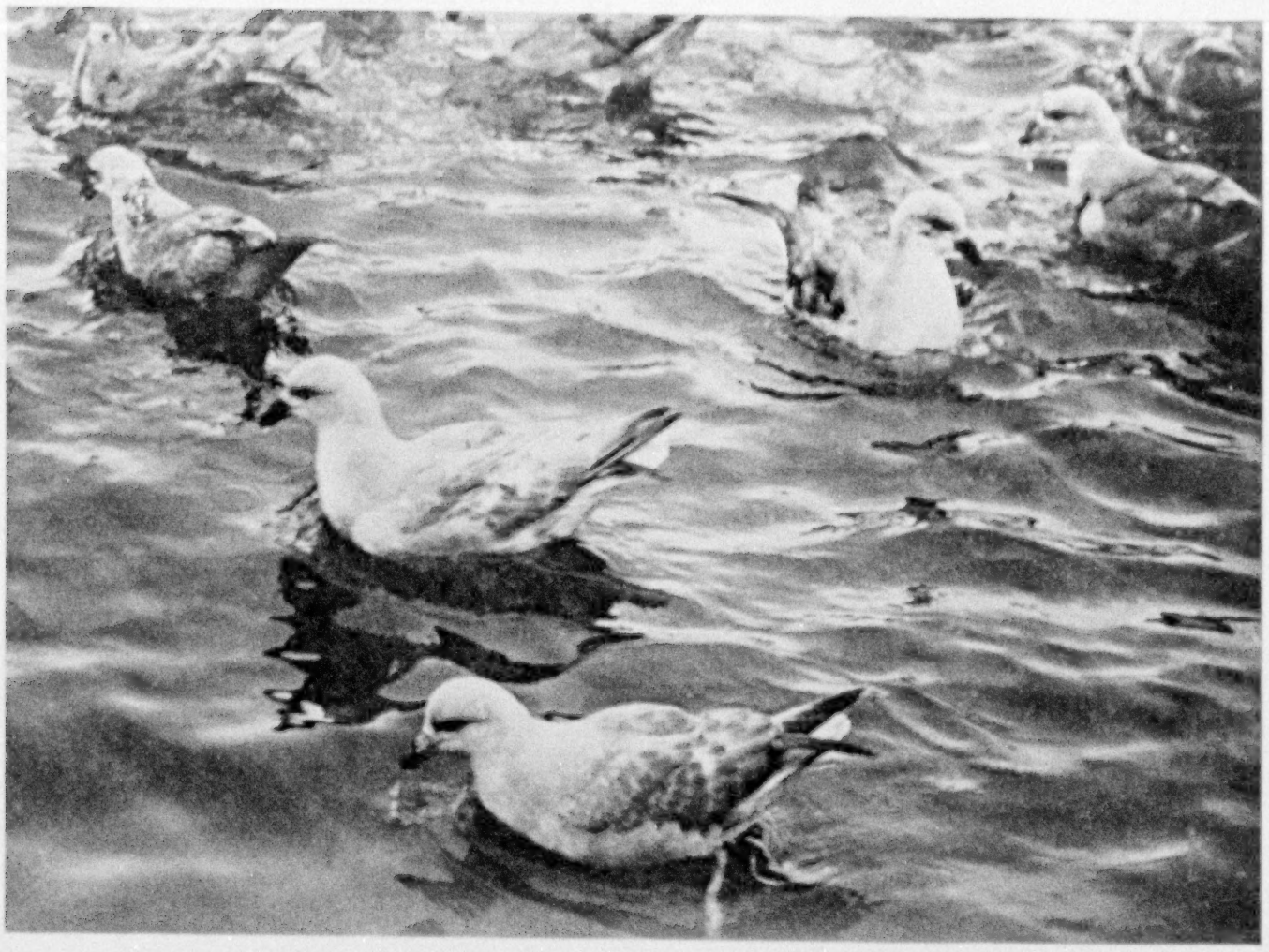
A HUNTING EXPEDITION STARTS OUT AT 40° F. BELOW ZERO

Before excessive slaughter began to reduce the game in Spitsbergen, the hunters and trappers obtained huge bags. In 1906, four years before the pre-war high-water mark, 31 sloops which went north from Tromsö stuffed their holds with the oil from 136 white whales and the pelts of 296 polar bears, 135 walruses, 6,000 seals, 2,888 reindeer, 61 blue foxes, 80 white foxes, and 1,000 pounds of eider down.

Photograph by G. Isachsen

SKIING ON MELTING SNOW ON THE LOWLAND OF PRINCE CHARLES FORELAND

Although this long, narrow island, with fog-wreathed shores lashed by thunderous surf, is seen by every ship going to Spitsbergen, its complete exploration was neglected until the early years of the 20th century, when a Scotsman, Dr. W. S. Bruce, under the sponsorship of the Prince of Monaco, mapped it in detail. Its central mountain ridge is broken in the south by the largest plain in Spitsbergen, with an area of more than 35 square miles.



Photograph by Oscar Halldin

A COLD SWIM IN ICE FIORD

Vast numbers of birds breed along the Spitsbergen coast in summer, but by September or October most of them have flown south. Relatively few species are fit for food, but eider ducks, geese, some members of the auk family, and the ptarmigan are all good to eat and make a welcome addition to a monotonous diet (see, also, text, page 245).

of being frozen in. Maritime insurance closes on September 20.

We had pleasant weather during August—some fog and some sunshine, but no rain. It seldom rains during the summer, although there are many damp, foggy days. On clear days the air is very dry, and while walking or exercising one is quite comfortable clad in light tweeds. In fact, when climbing the mountains I often had to stop not only to rest, but also to cool off. However, the latter was soon accomplished, and before long the cold wind would force me to start climbing again (see page 243).

Frost is always found in the ground two feet below the surface, and in places where the sun does not reach snow stays on the ground the year round.

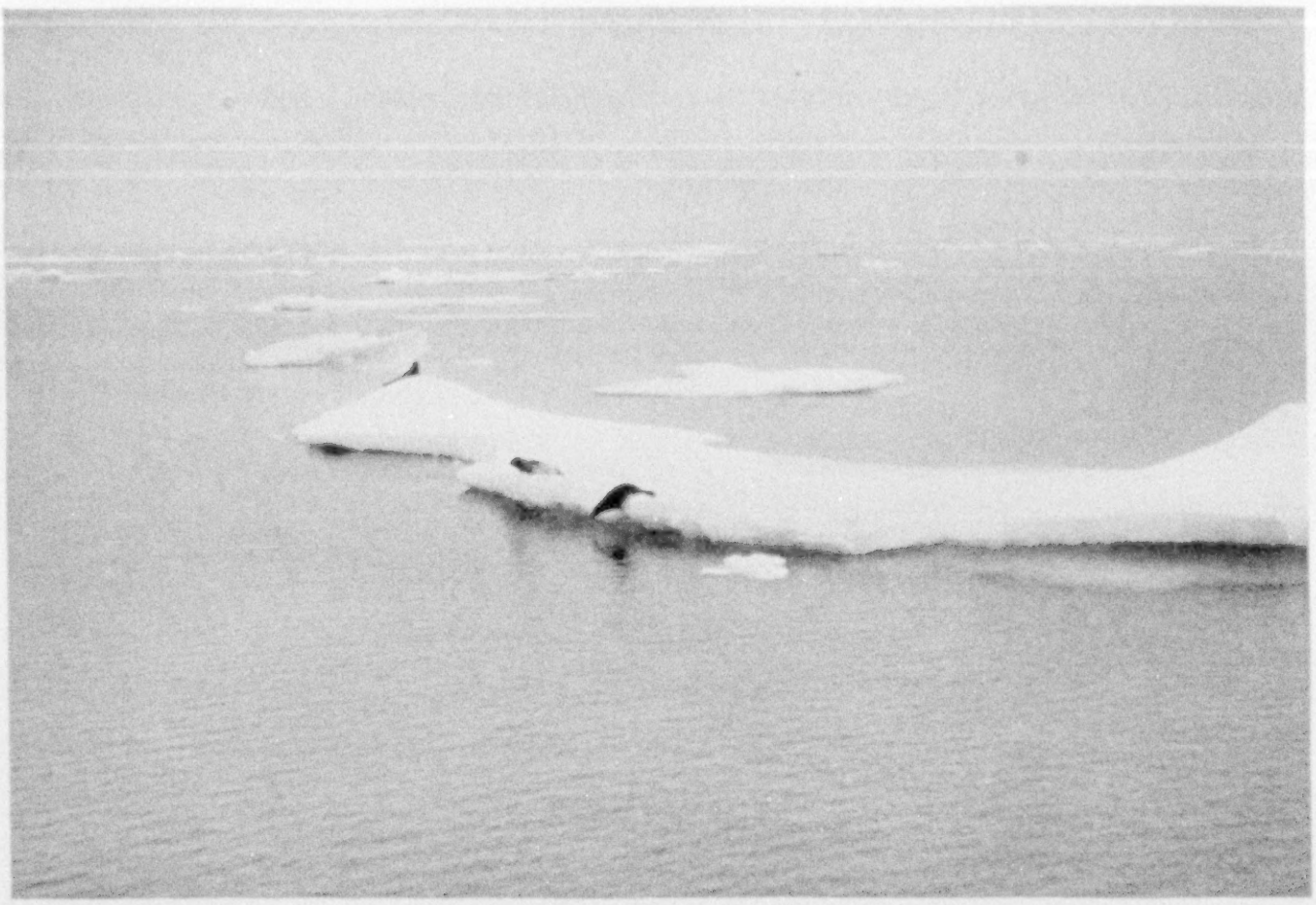
FROST HEAVES THE DEAD FROM THEIR GRAVES

One day I walked to a spot where a few Russian hunters had been buried many years before. The frost had heaved the bones and rude coffins up out of the ground and they lay strewn about a weather-beaten cross of wood. It was a sad spectacle and one it did no good to dwell upon, as I was already deciding to overwinter myself.

On August 23 the sun dipped below the horizon at midnight. After that we had no midnight sun actually, although the nights were as light as ever; but they began to darken and by September 20 we were using electric lights for 6 o'clock dinner. Our first snow fell early in September; it would melt from the valleys during the day, but remained on the mountains. Each week saw the snowline creep farther down the mountain side.

The sunsets were marvelous and lasted for hours. The snowclad tops of the mountains were suffused in brilliant rose light, while we in the valley were in a deep, blue twilight.

We had a comfortable little bungalow,



Photograph by Oscar Halldin

SEALS ON FLOE ICE OFF THE COAST

Once seal herds were numerous in Spitsbergen, but they have been ruthlessly hunted. Their meat has a strong, fishy taste, which makes it unpleasant to some palates.

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THE COAL MINE AT LONGYEAR CITY

Here a four-foot seam of Tertiary coal lies at 500 feet above sea level, on the hillside, with a wire ropeway connecting the mine with a loading jetty in the bay (see, also, illustration, page 239). This is the largest of the mining camps (see, also, page 228).

Photograph from Martha Phillips Gilson

THE AUTHOR STARTING FOR A MIDNIGHT DRIVE AT ADVENT BAY

By the end of April the midnight sun appears, and the Arctic-bound inhabitants take long walks and drives on the dog sleds in the evening, in an effort to make the time pass more quickly before the longed-for boat from Norway arrives, some time at the end of June or early in July (see text, page 245).

with a dining room, living room, bedroom, and kitchen—all small and opening into one another. A storeroom and coalroom, and last, but not least, a bathroom, completed the establishment (page 232).

ICE CAKES MELTED FOR BATH WATER

I thought I had reached Paradise when I first saw that bathtub, but on investigation found it to be a day's work to get things ready for a bath. The tub and a large stone caldron were the only things in the room. In the summer months my husband carried water by the pailful from a pipeline at the back of the house, filled this caldron, built a fire under it, and when the water was hot drained it into pails and filled the tub.

In the winter, when the water supply consisted of cakes of ice, we filled the caldron with ice, built the fire, melted the ice, heated the water, and then filled the tub.

When I announced my desire to spend the winter it caused quite a bit of discussion. The Norwegian women overwintering were used to cold weather and the dark season and would not suffer from the lack of fresh fruits and vegetables, as they were used to a heavy diet in their own country; but I would miss the sunshine, outdoor exercise, fresh fruits and vegetables, and would have no company except my husband and the five other members of the overwintering staff. We would be frozen in on Spitsbergen for nine months.

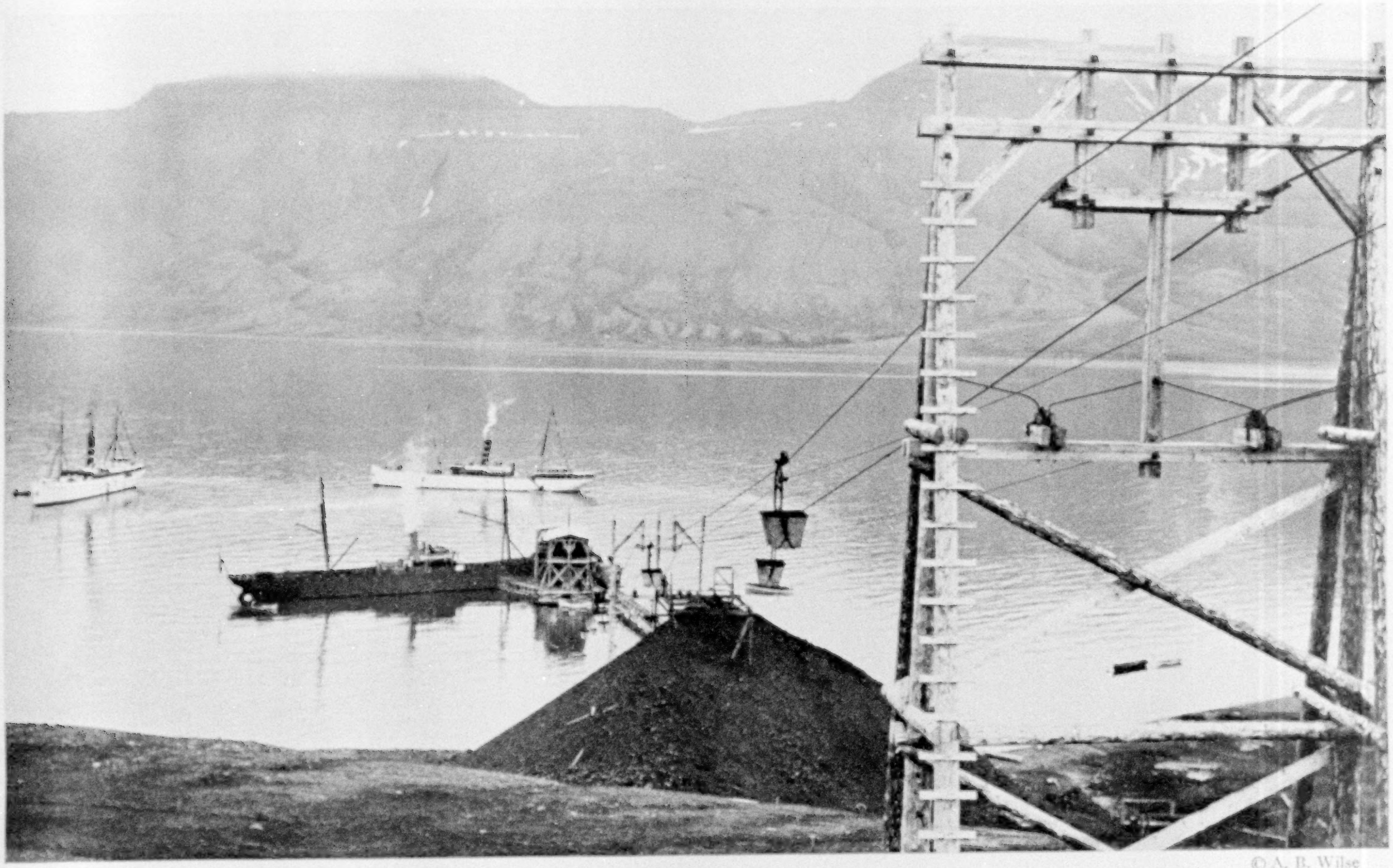
Such were the reasons weighing on the side of my going out on the last boat, while on the side of my overwintering was only the great urge, "Experience." But it tipped the balance and I stayed.

LOOKING IN VAIN FOR A SUNRISE

We made a list of things needed to see us through the winter and sent to Norway for them to come up on the last boat. Talcum powder and toilet soap were among the items ordered. It was a precious stock when it arrived and kept me in touch with civilization. No luxuries of any description could be bought on Spitsbergen.

SMERENBURG SOUND, NOW AN OUTPOST OF COLD AND LONELINESS, ONCE RESOUNDED TO SHOUTS OF "SHE BLOWS!"

Part of these waters wash the eastern shore of Amsterdam Island, where, in the early years of the 17th century, Dutch and Danish whalers divided the island into two settlements and anchored their tubby vessels opposite their blubber cookeries on shore. At the Dutch settlement, Smerenburg, or Blubbertown, sometimes as many as 300 vessels lay at anchor and put off their shallops after whales. By 1635 intensive fishing had driven these mammals away from the neighboring bays and sounds, so that they had to be hunted far from land.



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LOADING COAL AT LONGYEAR CITY, ADVENT BAY

At the shore end of the jetty is a store of coal mined during the winter. In summer a steamer lies alongside it and receives a continuous stream of fuel poured from the buckets of the wire ropeway overhead, which connects with the mine on the hillside (see, also, illustration, page 232, and text, page 233). In northern Norway Spitsbergen coal is gradually displacing that from English mines.

Photograph by G. Isachsen

BELOW THESE BILLOWS IS THE JUMPING-OFF PLACE FOR THE TOP OF THE WORLD

Concealed in the ground fog, 2,500 feet below, lies Kings Bay, the base of recent flights to the Pole. From here, in May, 1926, Commander Richard E. Byrd and Floyd Bennett made the first conquest of the North Pole by air (see "The First Flight to the North Pole," in the NATIONAL GEOGRAPHIC MAGAZINE for September, 1926), and two days later Amundsen, Ellsworth, and Nobile flew a semirigid dirigible over the Pole to Teller, Alaska (see "Navigating the *Norge* to the North Pole and Beyond," by General Umberto Nobile, in the NATIONAL GEOGRAPHIC MAGAZINE for August, 1927). The third air conquest of the Pole was made on May 24, 1928, by General Nobile in the *Italia*, a new dirigible, which broke to pieces while fighting a head wind back to Kings Bay.

The hours of darkness were increasing rapidly and we had very little daylight, with no sun at all by the first of October—just twilight—and a very depressing light it was, hard on the nerves. One looked in vain for a sunrise that would not come for several months. In the meantime it would get darker and darker, until continuous night settled down. One felt as if a tight black cap were being pulled slowly over one's head.

The last boat left for Norway early in October. She became frozen in the ice, but after two days of hard work on the part of her crew, and by dynamiting the ice, she finally broke through and steamed away for the south. She carried with her our farewell letters to loved ones back home. We did not sleep very well that night, wondering if we had made a foolhardy mistake in staying behind.

The weather was really cold now, with strong winds blowing most of the time. The wind is the worst feature on Spitsbergen. A still, cold day, with the temperature 50° Fahrenheit below zero, is not so dangerous as a windy day with a much higher temperature. When it is around 30° below and the wind blowing, look out for frostbite!

We settled down to a long winter: played cards, read, and sewed; sewed, read, and played cards. I spent as much time as possible over cooking and housework, but the former was limited, owing to a lack of things to cook. We had no eggs, but used egg powder; there were no fresh fruits or vegetables, not even lemons.

My husband and I suffered more from the lack of green things to eat than we did from the cold. We had a few old copies of an American weekly magazine and I would fairly weep over the colored advertisements for oranges, celery, salads, and so forth.

THE NORTHERN LIGHTS SHAKE OUT THEIR COLORS

The northern lights were magnificent. We saw them first early in November. They were like a giant handful of different-colored chiffon scarfs being shaken across the sky. As each one changed shape and position it changed color.

The dark season was upon us now, but when the moon was in the heavens we had moonlight the full 24 hours. The scenery was indescribable during these times. The snow on the mountains sparkled as if the heights were inlaid with diamonds, and the sky was a deep blue, full of mystery. The moonlight was so bright one could almost see to read out of doors. We took some very successful pictures by moonlight.

The view from our front door faced across the bay. There was not a sign of life to be seen—just cold, brilliant, frosty, snow-covered mountains when the moon shone. At other times everything was black.

CHRISTMAS CHEER FOR LONELY AMERICANS

At Christmas time we were in the middle of the dark season, without even the moonlight to brighten things up. It was a very dark time inside as well as out, with no holly or greenery or anything of the sort to give a holiday aspect to our home; not even a red apple to lend its note of color.

We realized that Christmas would have to be a mental state with us that year, with no outward means of expressing ourselves.

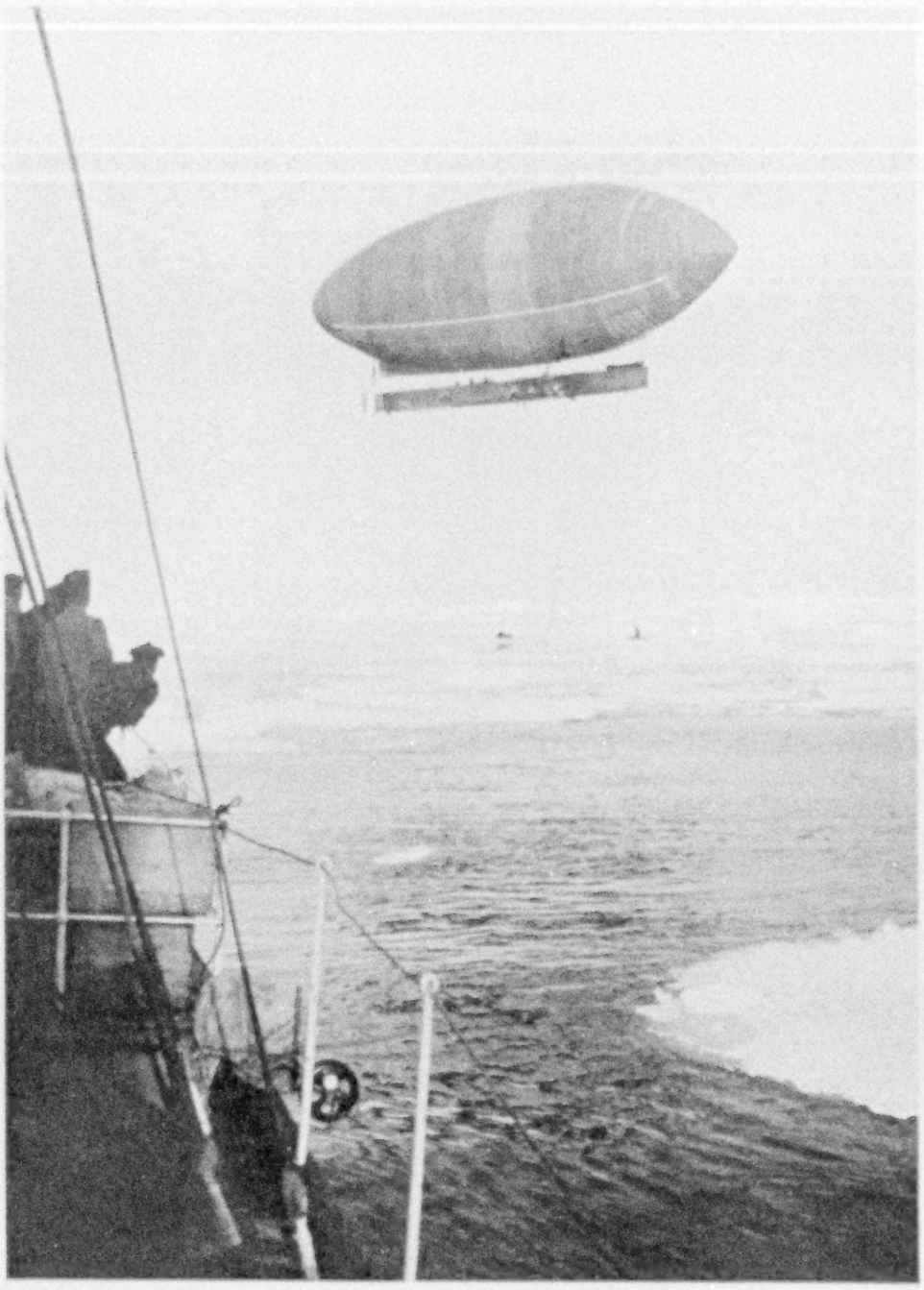
I found it hard to conceal my keen disappointment in not receiving a wireless message from home. I learned long afterward that my parents had tried in vain to send us Christmas greetings, but owing to a misunderstanding on the part of some one the message would not be accepted for Spitsbergen.

Christmas Eve found us making a heroic effort to be cheerful. We were at dinner when we heard the front door open and something drop on the floor. Footsteps hurried away before we could reach the living room to see who was there, but lying on the floor was an envelope addressed to "Mrs. and Sir Gilson."

Opening it we found a souvenir folder of Duluth, Minnesota, showing the coal and iron ore docks. Written on it in Norwegian were "Good wishes for the season," and the name of one of the miners, a Finlander, who had been in the United States several years before and had worked at the loading docks in Duluth.

That he prized that folder there is no doubt, else he would not have had it with him on Spitsbergen. But he knew we

XUM



Photograph by O. Holtedahl

AMERICA'S SECOND ATTEMPT TO REACH THE POLE BY AIR

In 1907 Walter Wellman, with the cooperation of the National Geographic Society, took off in a dirigible from Danes Island, near the northwestern point of Spitsbergen, on his first effort to attain the North Pole. Two years later he made another attempt from the same base. From his dirigible he dragged a large steel and leather "serpent" stuffed with extra food and supplies. The craft made a good start, but the serpent suddenly broke its cable and the airship shot into the air. After struggling to return southward, it fell into the sea about 120 miles to the north, and Wellman and his companions were rescued. This photograph shows his dirigible anchored in drifting ice north of Spitsbergen. Not until 1926 did a lighter-than-air craft succeed in reaching the Pole, when Amundsen, Ellsworth, and Nobile in the *Norge* crossed it from Kings Bay to Alaska.

were Americans and far away from home! So the kind deed of that big-hearted Finlander was the means of cheering us on that worst of all times to be away from home. We had a "Christmas gift" and, what was more, we had proof that the Christmas spirit was alive and in the air all around that little settlement near the top of the earth!

Need I say that that souvenir folder of Duluth, Minnesota, has a place second to none among my few really prized possessions?

For three months we saw not a ray of light other than moonlight. It was as dark at 12 o'clock noon as at 12 o'clock midnight.

There was a great deal of wind. Regular gales would blow for three days in succession. During that time it was almost impossible to keep warm. The stoves would become red hot and burn quantities of coal, but all the heat would be drawn up the chimney. The frost was a quarter of an inch thick on the door hinges in the living room. The fine snow would sift in through the double windows and gusts of wind would actually lift the cards from the table as we sat playing.

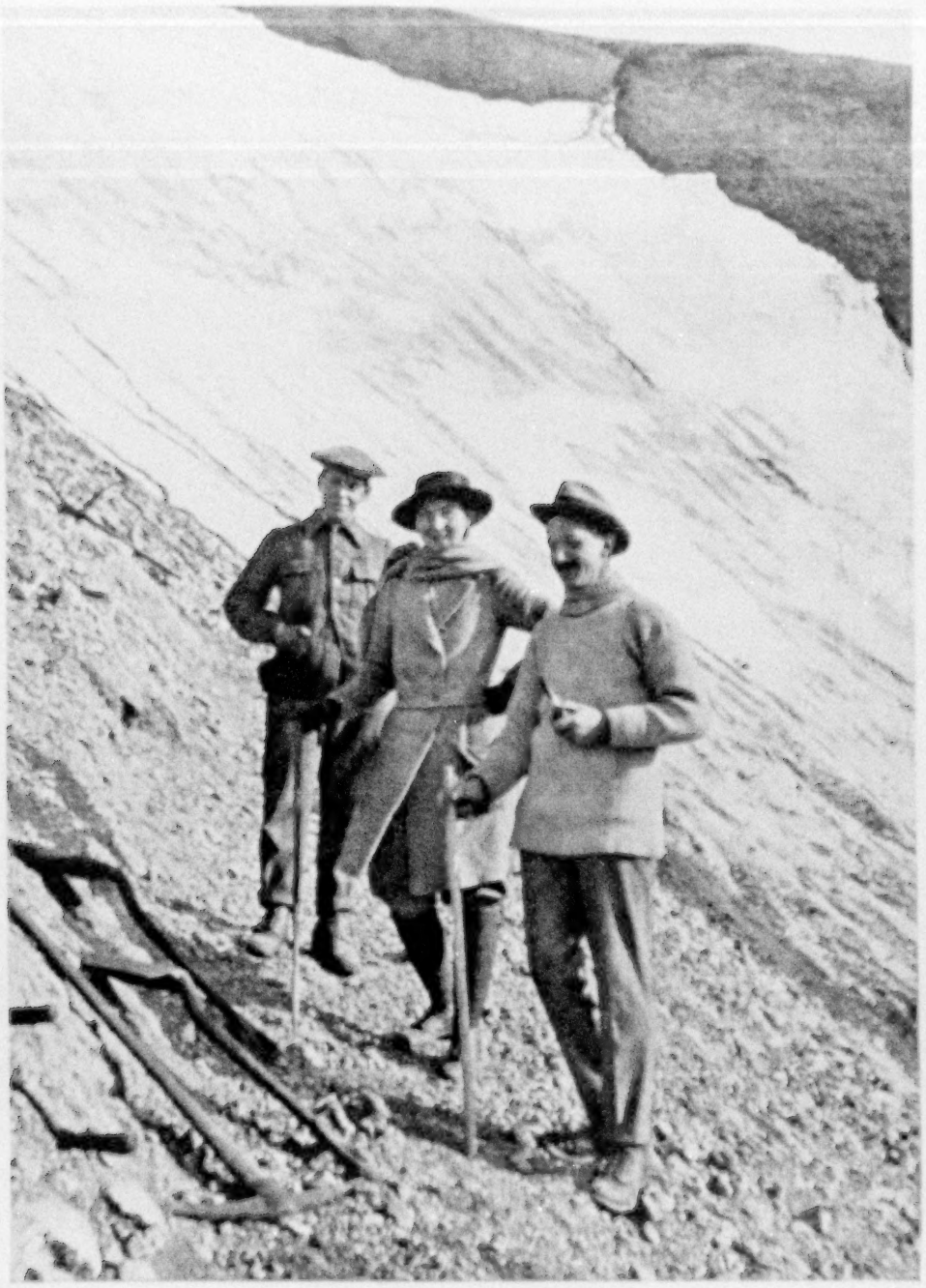
At times like that we felt very small and friendless in the great Arctic, but consoled ourselves by saying it would all be over within a year, not knowing at the time that we were to spend the next winter in the north of Norway.

The water for all purposes was brought to camp in the form of large cakes of ice. These were dumped at the rear of the houses. We had a large boiler, which we kept filled with ice on the kitchen stove at all times. As this melted we filled other kettles and heated it for washing purposes. During the summer months water is piped

to the camp from the glacier.

On January 19 I stepped out of the door at noon, and there, to the south, was a narrow, faint, pinkish light on the horizon.

Oh, the joy of it! It lasted but a few minutes, but its promise was great — the coming of daylight! Each day after that we would see the light for a longer time. It steadily grew stronger, and by the last of January we could distinguish objects in a room for a few hours around the middle of the day. The sunrise is a long-drawn-out affair as far north as Spitsbergen.



Photograph from Martha Phillips Gilson

"COOLING OFF" ON A GLACIER

On clear days, when the air is dry, one can walk or exercise with comfort in light tweeds, and when climbing mountains or glaciers occasional stops are necessary not only to rest, but to get cool. This group is halting during a steep climb up a glacier at Recherche Bay.

WHEN THE SUN RETURNS—A GLORIOUS SIGHT

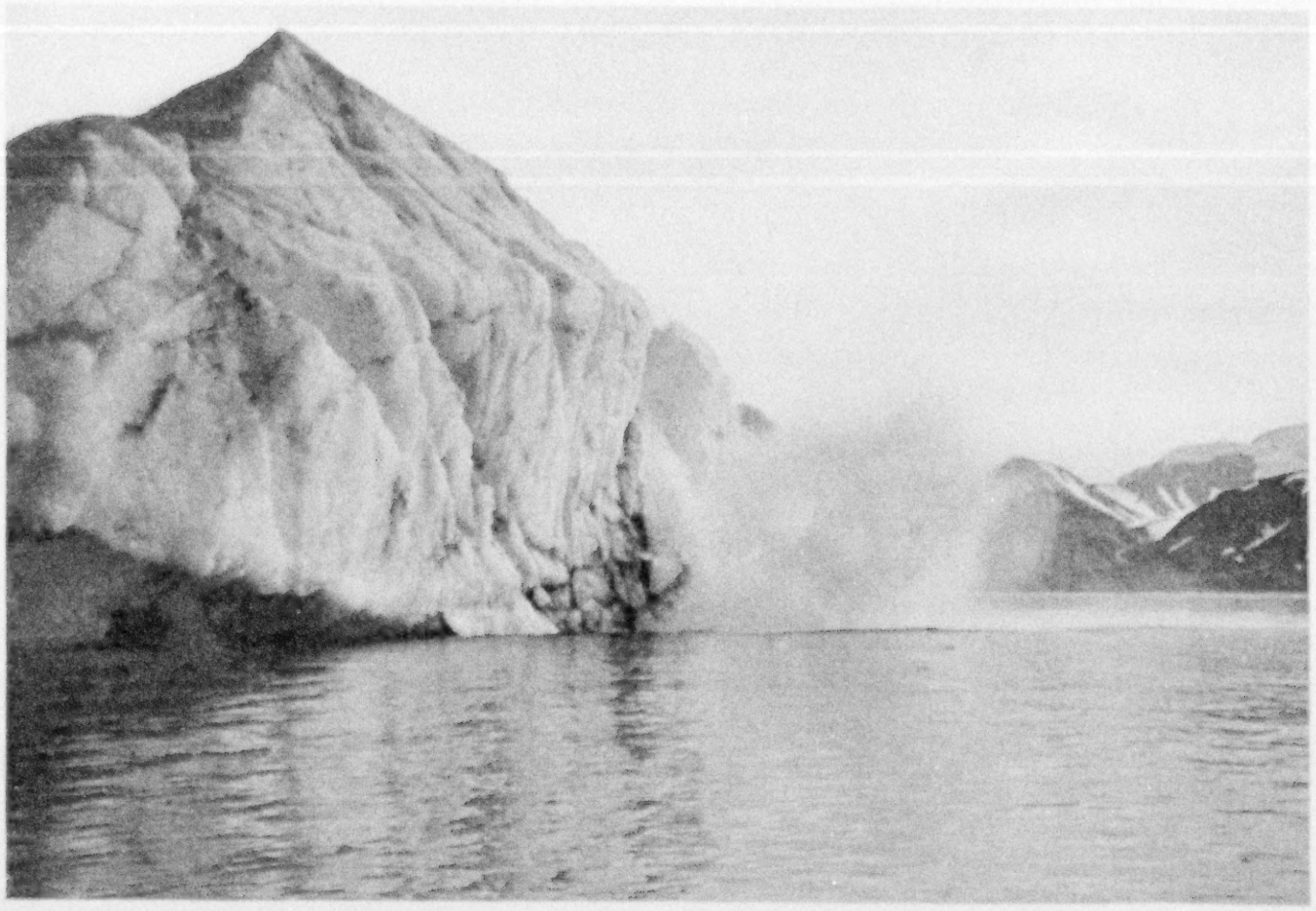
With the coming of daylight we began to sleep better. During the dark season one finds it very difficult to sleep. It seems strange, but is true. One would think it might be the other way, and that people would want to hibernate like bears. Perhaps we did want to, but could not.

We were surprised to note the January thaw on Spitsbergen. We had several days of warm rain, when all the snow melted! When the weather changed it turned the whole camp into a skating rink. It was very dangerous walking and darkness added to the discomfort of getting about. The camp was built on a slope, and it seemed as if all who tried to walk would land in a heap in the valley below. Electric lights were strung here and there along the "main" thoroughfare, but they looked like lightning bugs, surrounded by so much vast space.

"As the days lengthen, the cold strengthens," can truthfully be said of Spitsbergen. We had our coldest weather as the light season came on, the thermometer often showing 50° below zero.

LONG NIGHT BRINGS PALLOR OF DEATH

By the middle of February we could see the reflection of the sun on the tops of the mountains. It was a glorious sight. They looked so warm and colorful high up in the air, all bathed in that beautiful sunlight, while we were cold and dark down in the valley. But we were gradually getting more light each day. By the last of February we turned out the elec-



Photograph by Oscar Halldin

AN ICEBERG CRASHES FROM THE GLACIER POINT INTO ICE FIORD

This, the largest fiord indenting the main island, is 62 miles long and in some places 20 miles wide. It is the chief waterway in the archipelago, for it cuts across mineral-bearing rocks and also, through its numerous adjoining fiords, permits access by deep water into the heart of the island. Longyear City is on Advent Bay, a branch of Ice Fiord.

tric lights for a couple of hours in the middle of the day.

How awful we looked! We were a pale and sickish yellow color. It was rather a shock to glance in the mirror by daylight. We were bleached out and dead-looking. But I was not the only hideous one at the camp. We resembled a colony of corpses.

I saw the sun for the first time that year on March 9. With so few dark objects on which to rest one's eyes, the light was dazzling. Some of us had to wear dark glasses whenever we went for a walk.

It is difficult for one accustomed to living among trees and houses to realize just what the terrific glare of sunlight is like on an unbroken expanse of snow. There was not a dark object anywhere on the landscape, except the few buildings in the camp. When one is away from camp it is sometimes necessary to rest one's eyes on the dark clothes of one's companions.

This strong sunlight is especially hard on the eyes after the long dark season. One of the men on the staff nearly lost his sight through eyestrain. He had to sit in a dark room for many days with his eyes bandaged (see, also, page 246).

With the coming of the light season the dogs were trained to pull the sleds. One day I saw the team going by the house. Norman, the man who was training the pups, was running ahead of the team.

The pups were following along in such good order that Norman thought he could take a rest, so he ran around behind and hopped on the sled. As he did so every-one of the pups copied their master, until there sat the driver and nine husky pups all in a row on the long sled! They were large pups, with very thick fur and heavy legs, and were awkward to an extreme.

The men went on skiing and hunting expeditions. The first fresh meat brought back to camp was eaten with relish. Reindeer are plentiful and the meat is very good. Some of the men hunted seal. I did not care for it, as it has a strong,

Photograph by D. F. Higgins

A COAL MINE ON THE EAST SIDE OF ADVENT BAY

The extent of Spitsbergen's coal deposits is not accurately known, but they are estimated at 8,750,000,000 tons. This is mostly the Carboniferous and Jurassic type, but the Tertiary, a more valuable kind, is believed to exist in considerable quantities. Some of the seams are eight feet thick. The long, cruel winter is hard on the miners, but radio and motion pictures now furnish occasional diversion.

fishy taste. There are many eider ducks, ptarmigan, various species of wild geese, and members of the auk family, all good to eat.

On April 10 we saw snow melting in the sun. It was the first sign of spring and a welcome sight. The birds were twittering and the sun shining. It seemed good to be alive. We were getting very few hours of darkness now. The sunsets were wonderful, the color remaining in the sky for two hours or more.

By the end of April we had the midnight sun again. We took long walks in the evenings to help put in the time, which began to drag heavily. All agreed that the dark season had gone quickly, but the months of March, April, and May were each an eternity in length. It was too early to begin to look for a boat from Norway. We were all talked out, worn out, and our nerves were frayed out. It was a hard time for everyone. The only communication we had with the outside world was by wireless, and all were getting anxious for personal news. The weather was warm and melting or cold and snowing, by turns.

The first of June I took a ride on the dog sled. The ice in the bay showed no signs of breaking up, and looked as if it would be there forever. We took several pictures at midnight. I loved the light nights and always enjoyed taking pictures at night. It gave me a thrill of pleasure to think where I was. I admit I often felt a keen satisfaction in realizing I had come through a winter on Spitsbergen.

THE MEMORABLE DAY WHEN THE BOAT FROM HOME ARRIVED

At the beginning of June the main topic of conversation throughout the camp was when the first boat would arrive. Some of the men even went so far as to draw crude sketches of the company steamer and tack them on the walls of their cabins. In the staff mess it was also a subject of intense interest.

The boat arrived at the ice edge, 40

Photograph by Martha Phillips Gilson

A SKIING EXPEDITION LEAVING ADVENT BAY

To one accustomed to life among trees and houses, it is difficult to realize the intensity of the sunlight's glare on an unbroken expanse of snow. When away from the dark houses of the camp, it is necessary to rest the eyes on the dark clothes of one's companions (see text, page 244).

miles from camp, on June 8. The men came over the ice on skis, bringing with them the mailbags, some apples, eggs, and candy. It was a day to be remembered! My mail from home was indeed welcome, even if the latest news was two months old. Some of the letters had been written the previous September!

The eggs were the first we had seen in a year. I could not eat fast enough! That evening we spent talking with one of the staff who had come up on the boat. We almost wore him out answering questions about the whole world.

Conditions were bad that year; the ice did not leave the bay until July 15. The first boat did not get in to the dock until July 21. What a wonderful sight she was! It had been nine months since any of us had seen a boat. It was one of those moments that bring tears of emotion to the eyes of men, to say nothing of poor, weak, young women.

Several boats came in for coal during the next two weeks, and the camp was a busy place again, loading coal day and night. The summer staff was there, and once more conversation was heard, loud and long, of an evening.

I was planning to leave for Norway on a coal boat about the first of August. As the time drew near, I found myself spending more and more hours out of doors. I took all my favorite walks again, sat looking at my beloved views, wrote descriptions of them in my diary. I promised myself that I would return to Spitsbergen if ever the opportunity presented itself. The "call of the cold" was in my blood.

INDEX FOR JANUARY-JUNE, 1928, VOLUME READY

Index for Volume LIII (January-June, 1928) of the National Geographic Magazine will be mailed to members upon request.

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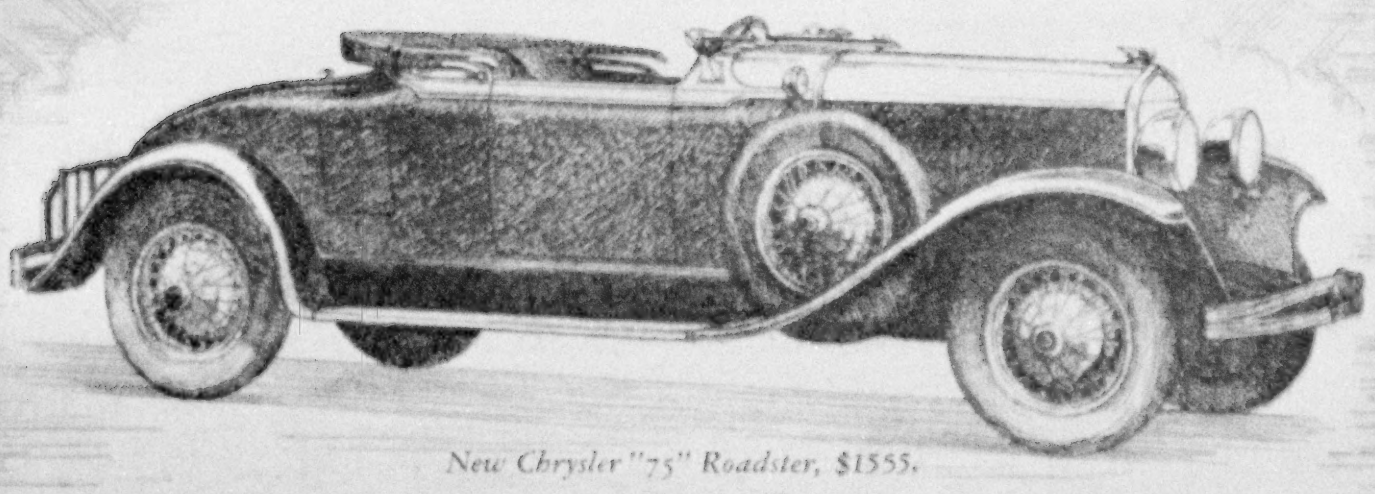
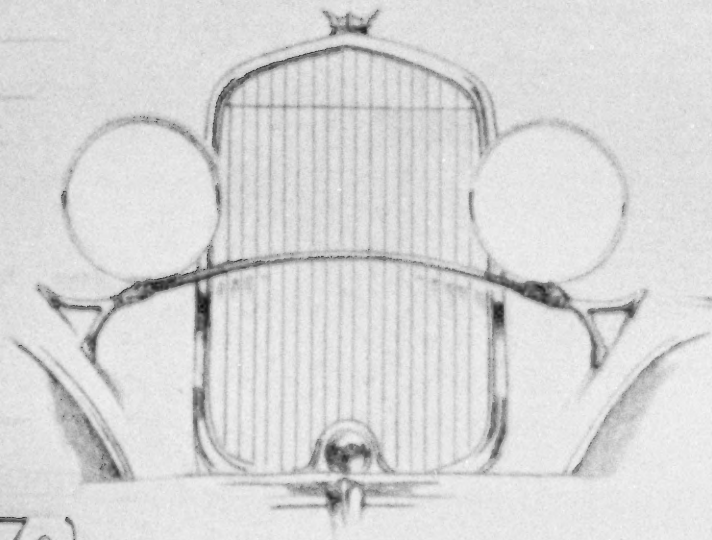


New Chrysler "75" Roadster, $1555.



WALTER P. CHRYSLER and his associates have held from the first that, constantly to extend its leadership, Chrysler must periodically create new modes which would proclaim themselves, almost upon sight, as overwhelmingly more attractive.

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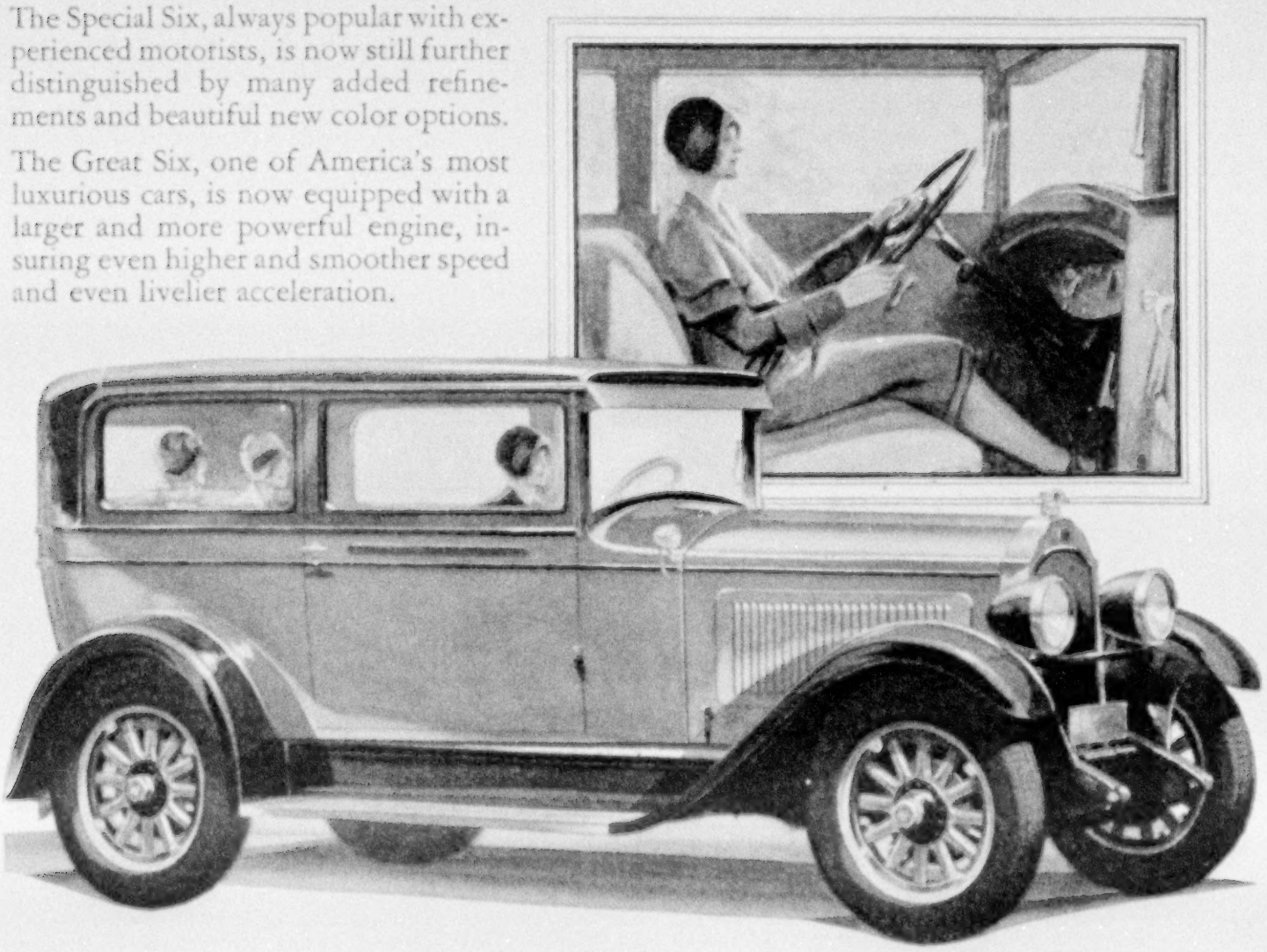
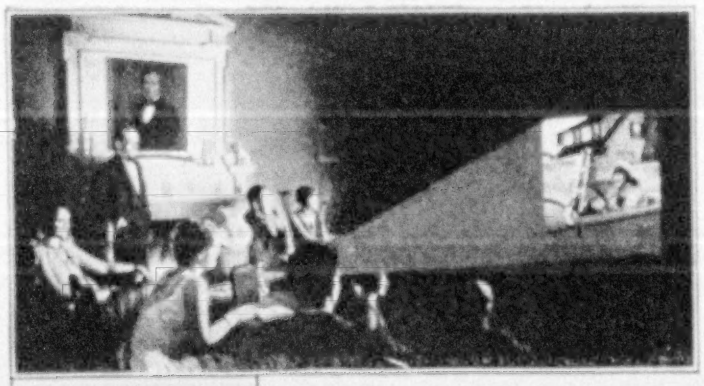


WILLYS-KNIGHT SIX



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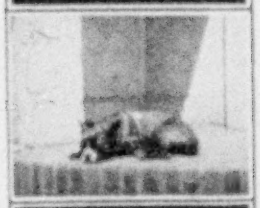

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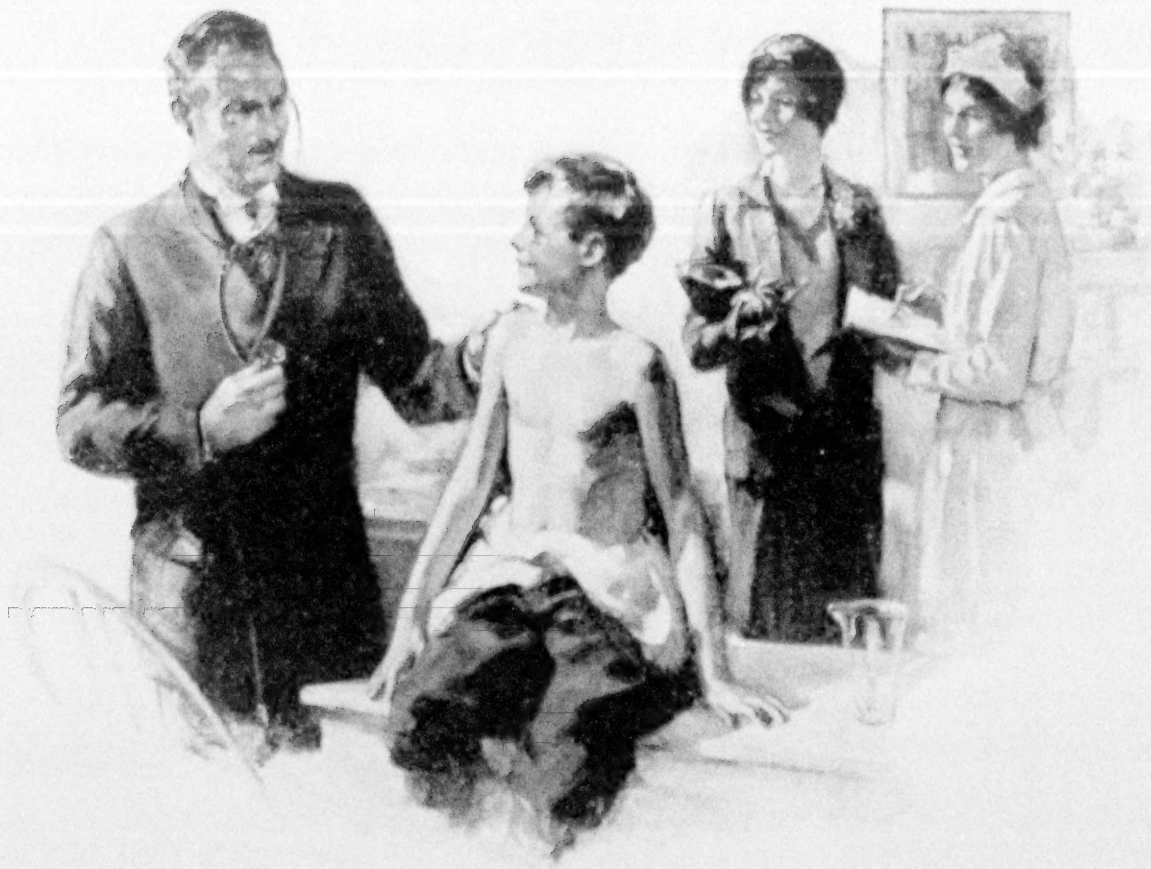

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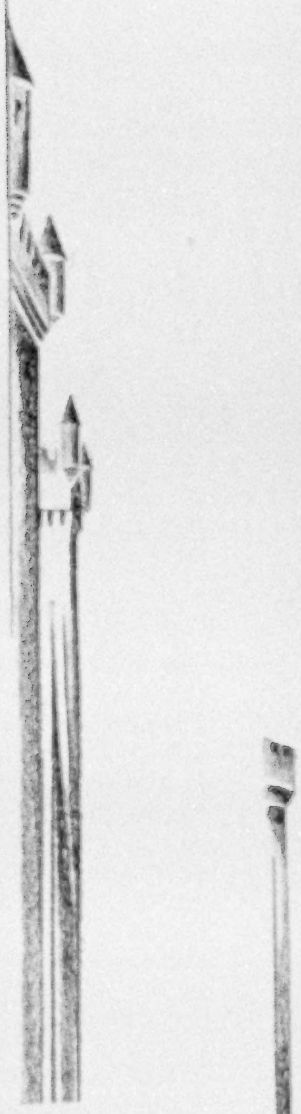

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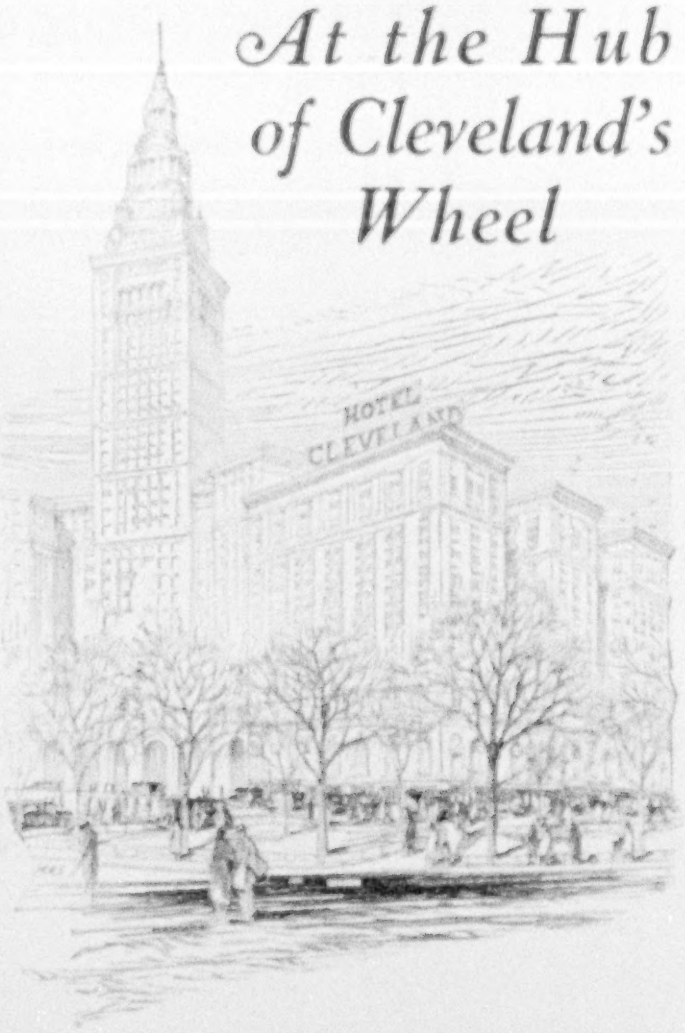
At the Hub of Cleveland's Wheel



HOTEL CLEVELAND, adjoining Cleveland's new Union Terminal (the second tallest building in the world) is the most centrally located and most easily reached hotel in Cleveland. Within the shadow of the great Terminal Tower are the business and shopping districts to the east, wholesale houses to the west, Government buildings north and manufacturing south.

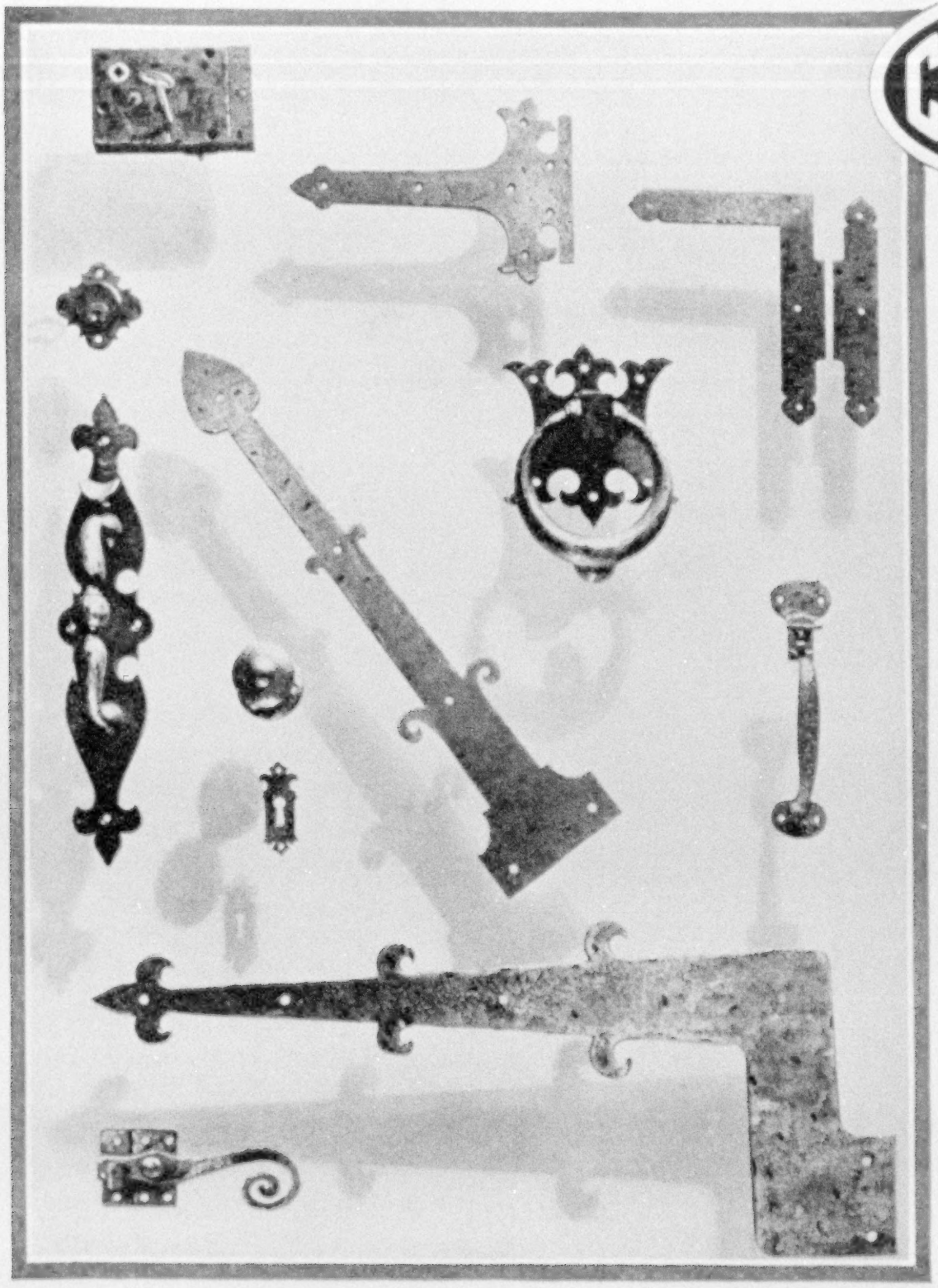
The reason travelers and Clevelanders alike prefer Hotel Cleveland is not alone this location advantage, great as it is. The appeal of the Cleveland—you'll sense it the moment you enter the wide-flung door—is the warm hospitality, the luxurious club-like surroundings, the genuine desire of every one of us that you heartily enjoy every moment of your stay in our city and in our hotel.

HOTEL CLEVELAND
PUBLIC SQUARE · CLEVELAND
1000 rooms with bath,
150 at $3 · Servidor Service

HOTEL CLEVELAND

Good Buildings Deserve Good Hardware

CORBIN



Early English Hardware . . *by* Corbin

IF your home is to be a bit of Old England transplanted, give it that essential touch—the touch of staunch and sturdy Early English hardware made by Corbin.

Handles and hinges, knobs and knockers, locks and latches—all reproductions of old originals. Complete hardware equipment—architecturally correct—the right and needed item for every door, every window, every cupboard, every shutter. All authentic. All rust-proof. All Good Hardware–Corbin.

Early English is but one of many charming Corbin designs. Graceful hardware for Georgian homes. Designs in the Colonial, Spanish and French traditions. In fact, whatever the hardware need, whatever the period, both can be met with good designs in Good Hardware–Corbin.

P. & F. CORBIN SINCE 1849 NEW BRITAIN CONNECTICUT

The American Hardware Corporation, Successor

New York Chicago Philadelphia

Early English hardware by Corbin is fully illustrated and described in Booklet K-522. A request to Department N-8, P. & F. Corbin, New Britain, Conn., will bring a copy to you.

Nothing too good ... for the Home You Live In

CHAMBERLIN WEATHER STRIPS

"How well they bar the storms of Dust and Sand"

Not only in winter but also in summer the protection that Chamberlin Weather Strips provide is out of all proportion to what you pay for them. But it is questionable if any money you spend for home equipment goes for a more vital purpose or one where the best and only the best can meet your needs. Windows and doors are admittedly the weak spots in any building. Chamberlin weather stripping, therefore, becomes a sheer necessity and for a possible small difference in price you can't afford to be without the protection and service which Chamberlin guarantees to give. You need Chamberlin to keep out dust, soot, sand and rain as well as to bar out draughts, to keep your home evenly heated, and to save fuel in winter. There is no more convenient time to have Chamberlin Weather Strips installed than right now.

Chamberlin Metal Weather Strip Co., Inc.
West Lafayette Blvd., Detroit, Mich.
Manufacturers and Installers of Weather Strips and Roll Screens
Over 100 Sales-Installation Branches throughout the United States

CHAMBERLIN WEATHER STRIPS
SINCE 1893 - THE STANDARD

Chamberlin Metal Weather Strip Co., Inc.
West Lafayette Blvd., Detroit, Mich.

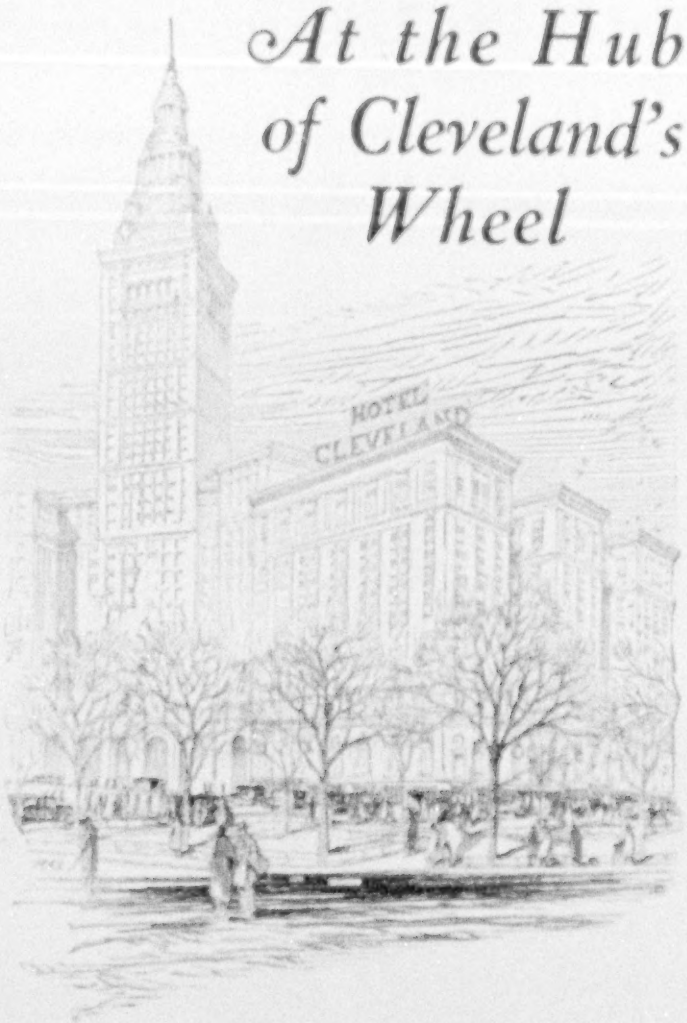
Give me some idea how much it will cost me to Chamberlin Weather Strip my home,

_____ windows _____ doors.
Send me some Chamberlin literature, too.

Name _____

Address _____ FG-307

At the Hub of Cleveland's Wheel



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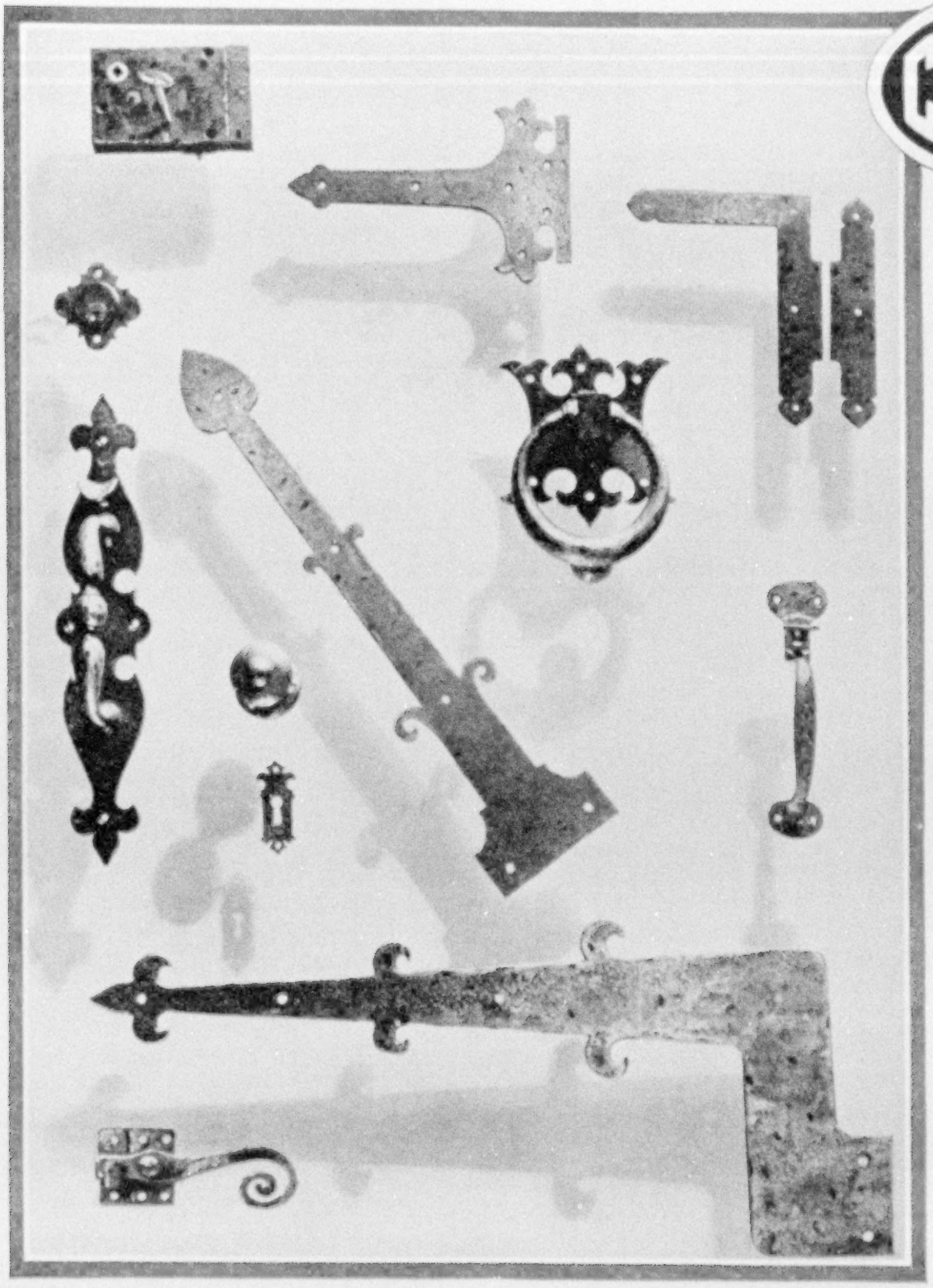

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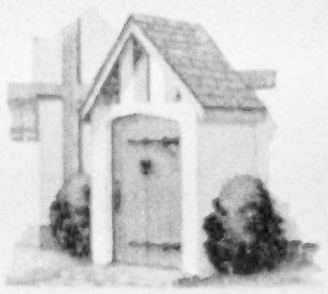

We Tried 129 Times

Then came the formula for this amazing shaving cream, the fastest selling in America. Try it 10 days at our expense before you buy

Gentlemen: When we announced our new shaving cream to the world, thousands of men instantly bought and tried it on our reputation.

Since then, hundreds of thousands have made our free test and proved the claims we make for it, on their own faces—in their own bathrooms. And this is the greatest practical laboratory in the world.

When a man sends the coupon for his trial offer, we know the chances are that he will *continue* using Palmolive Shaving Cream. For most men, we find, never return to former shaving methods.

These 5 important features

1. Multiplies itself in lather 250 times.
2. Softens the beard in one minute.
3. Maintains its creamy fullness for 10 minutes on the face.
4. Strong bubbles hold the hairs erect for cutting.
5. Fine after-effects due to palm and olive oil content.

Now mail the coupon

We take the risk—not you. We undertake to win you in ten shaves. Will you give us the opportunity? Won't you use the coupon, please?

Palmolive Radio Hour

Broadcast every Friday night—from 10 to 11 p. m. eastern time; 9 to 10 p. m. central time—over station WEAF and 32 stations associated with The National Broadcasting Company.

THE PALMOLIVE-PEET COMPANY,
CHICAGO, ILL.

3975

10 SHAVES FREE

and a can of Palmolive After Shaving Talc

Simply insert your name and address and mail to Dept. B-1539, Palmolive, 3702 Iron St., Chicago, Ill. Residents of Wisconsin should address Palmolive, Milwaukee, Wis.

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(Please print your name and address)

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Advertising messages must have real value to the reader, else they are not admissible to The Geographic.

The members of the National Geographic Society own The Magazine, and their interests are paramount.

THE Geographic takes special pains to investigate new advertising offers. Its representatives interview users, obtain reports from Government sources for standards, or consult experts before accepting such advertisements for its pages.

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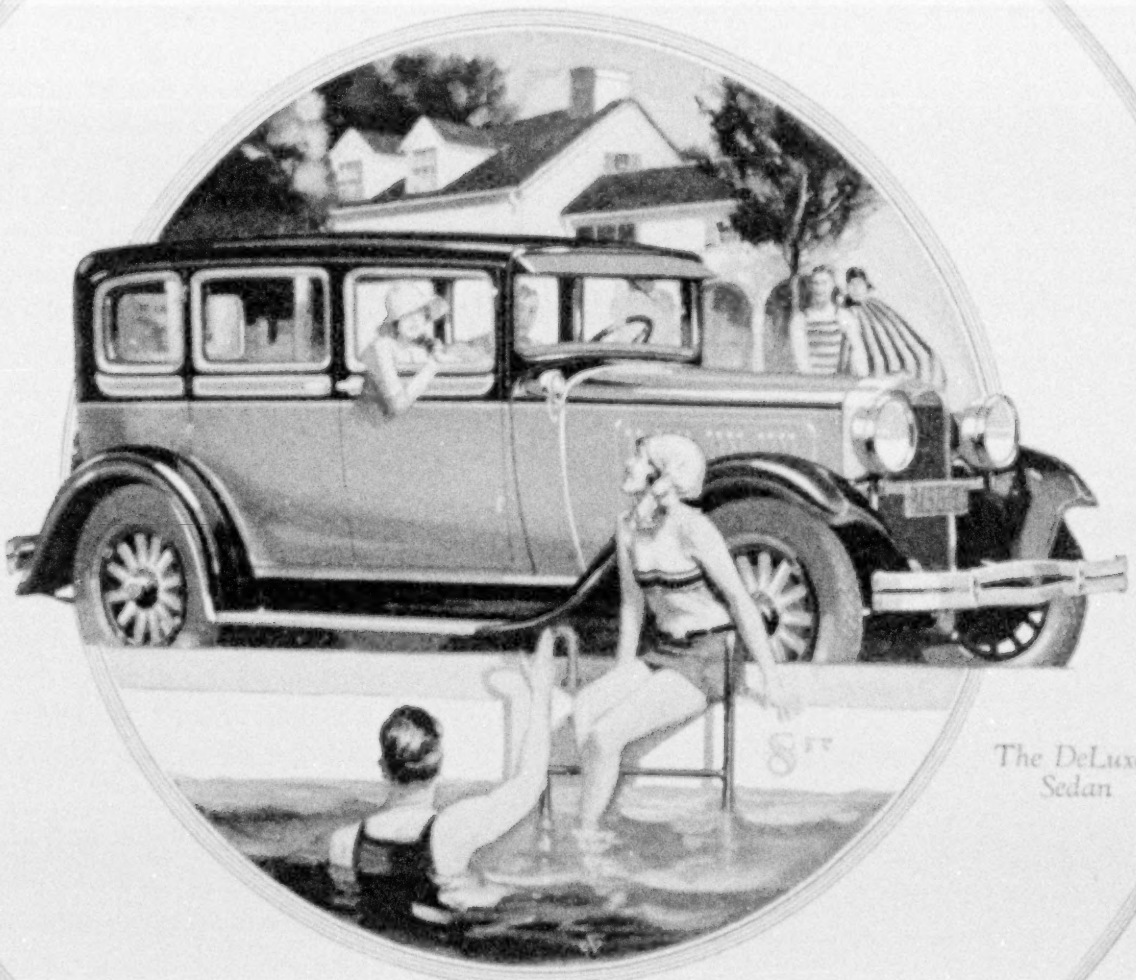
THIS rigid advertising policy—honesty of offer, high standard of product, its interest and value to the readers—coupled with an extraordinary confidence, make for an amazing responsiveness to the advertising messages carried to the entire Family in 1,150,000 homes each month.

The proofs are of record and the endorsement of this sound policy by the great national advertisers is shown by their many years of Geographic use.

National Geographic Magazine

WASHINGTON, D. C.



The DeLuxe Sedan

Lines that critical eyes approve

From Bailey Beach to Santa Monica the sheer beauty of Dodge Brothers Victory Six continues to evoke overwhelming enthusiasm.

Its roomy, luxurious interior; its resilient easeful riding; its aggressive flow of lines and curves—all these have contributed to the increasing popularity of the Victory Six among those who know beauty and demand it.

The same exclusive Victory construction that makes the Victory a *safer* car makes it more beautiful, too. Space formerly wasted on body sills is now added to headroom, and the center of gravity is brought closer to the ground.

A glance at the Victory will give you a new conception of dashing beauty. An hour at the wheel will prove to you that this regal outward fineness is simply *one* of numberless pace-setting Victory features.

Dodge Brothers Victory Six is the *world's fastest car* in its price class and the *swiftest car* on pick-up. It is the pace-maker of its class on the hills—and all in all, the sturdiest, safest and most stylish car yet conceived at anywhere near its price.

The VICTORY SIX

BY DODGE BROTHERS

TOURING CAR $995 • 4-DOOR SEDAN $1095 • DELUXE SEDAN $1170 • SPORT SEDAN $1295 • *f. o. b. Detroit*

YOU TOO, can have Agfa film!

AGFA film, the choice of professional photographers, motion picture camera men and aviators in their exacting work...

The film that scientists rely upon to retain the most accurate photographic record of their researches...

The film that explorers use to get the best pictures of the wild and desolate regions of the earth...

This film—Agfa—is now available to every camera owner.

Agfa the "all-weather" film

Agfa is actually an all-weather film. Its efficiency is not affected by Mr. Sun's dictates. No longer need bad weather mean "no pictures today".

Agfa is a much faster and more sensitive film. Its greater speed offsets the most common cause of poor pictures: under-exposure. Its greater sensitiveness sharpens details, giving to pictures a depth and feeling—the professional touch.

Make this simple test

The next time you buy film, ask for a roll of Agfa—now it is available for all cameras and costs no more than other film.

Take your pictures without troubling to wait for the sun to come out, or the rain to stop, or the clouds to clear away. Then compare them with other pictures you have taken.

$7500.00 in Prizes

Don't delay to enter the great Agfa picture contest. The contest is divided into four classes: Baby Pictures; Rainy-day Pictures; Fair-weather Pictures; Unusual Pictures.

No pictures from professional photographers accepted. Full particulars from your dealer, or mail coupon direct to us—*today*. AGFA ANSCO Corporation, Binghamton, N.Y.

Agfa

Agfa Film Division; Agfa Ansco Corp., Binghamton, N. Y.

Please send me particulars of the Agfa Prize Picture Contest.

Name.....

Street.....

City..... *State*.....

Came the dawn

YES, it finally came. Touring last summer, driving late one night trying to make the next town. Loose wire, short circuit, no lights. Box of matches didn't last long. Well, the family finally walked four miles to a farmhouse and I spent the night in the car. Believe me, there's a flashlight in the side pocket of that car NOW. And one that's dependable—an Eveready. Ever ready to help me out in the dark because I keep it primed for action with the best there are—Eveready Batteries. Here's a straight tip to tourists and don't pass it up. Get the flashlight habit.

VACATION TRIPS

HAVANA 10 & 17 Days **$140 up**

All expenses afloat and ashore including automobile sightseeing trips in and about the city. Sailings from New York each Saturday.

MEXICO CITY $275 up

Special 25-Day All-Expense Cruises

Including shore visits at Havana and Progreso. Sailings New York to Vera Cruz each Thursday.

Ward Line Ft. Wall Street, New York or Authorized Tourist Agents

Scott's Creeping Bent for Perfect Lawns!

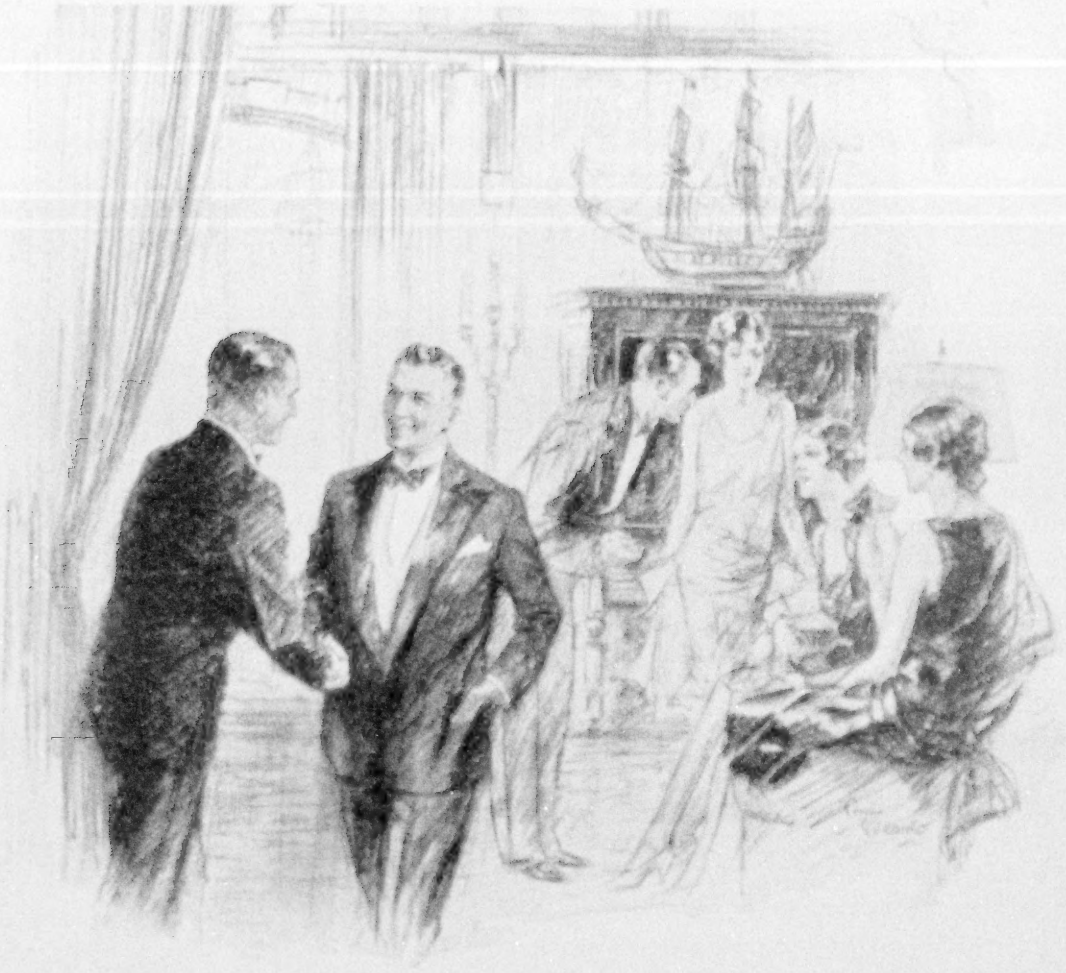
Sod in six weeks. A rich, velvety stretch of lawn that chokes out weeds before they can grow. A deep, thick, uniform turf that's everlasting and that makes your home a beauty spot.

The New Super-Lawn

Instead of sowing seed, you plant stolons or the chopped grass—and in a few weeks you have a luxuriant lawn like the deep green pile of a Turkish carpet. Can be planted any time, but fall is the best time to plant. Grows anywhere except in extreme south. Read all about this unusual grass in our illustrated booklet, "Bent Lawns," which gives full planting instructions and explains soil requirements, mailed on request.

O. M. SCOTT & SONS CO.

360 Main Street Marysville, Ohio



Step over the Threshold of a NEW ADVENTURE *in Home Comfort and Convenience!*

Many are already experiencing it . . . . The pleasure is yours—your family's—at your bidding!

You have thought of oil heat for your home—have planned to enjoy it some day . . . but why remain on the threshold of so great an adventure in better living?

The engineers who pioneered the oil burner have perfected Electrol to a point you may not have realized! The improved Electrol gives you that degree of dependable automatic heat which you have wanted. Truly an investment in permanent comfort . . . Always the temperature you like best, regardless of the weather. Electrol is All-Electric. . . . Entirely Automatic . . . Economical. Produces a surprising volume of heat without waste of fuel. Governed in every phase of its quiet operation by *The Master Control* which stands watch like a living sentinel at your furnace door, regulating the oil, the electric ignition and combustion — safeguarding your comfort day and night.

Why not give your home this modern automatic heat—a satisfactory and lasting adventure in greater comfort and convenience for the hours you spend indoors!

Wherever Electrol is sold, you will find a complete oil heating service backed by a sound, large and growing manufacturing organization. Sizes for every type and size of building. Convenient terms, if desired. Your request will bring the enlightening booklet, "The Master Furnace Man."

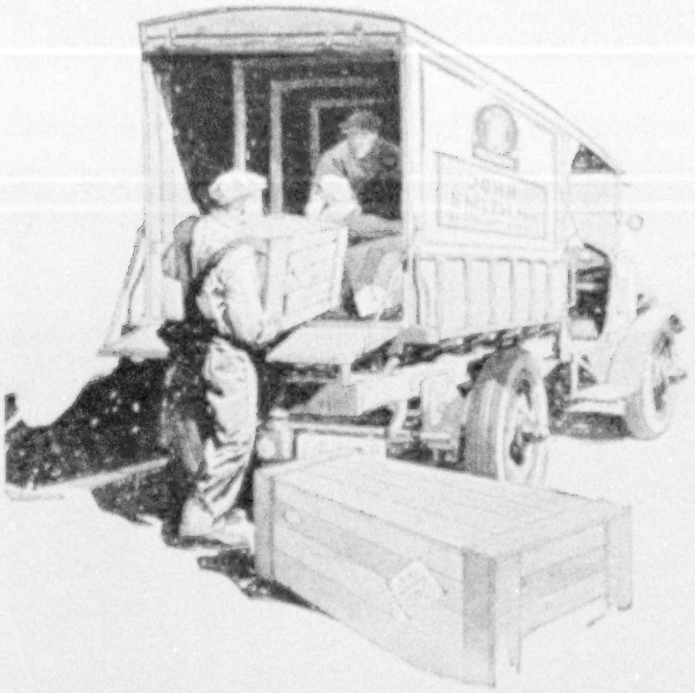
ELECTROL INC. *of* MISSOURI
173 Dorcas St. St. Louis, U. S. A.

ELECTROL

The OIL BURNER *with The Master Control*

LISTED AS STANDARD BY THE UNDERWRITERS' LABORATORIES, AND BEARS THEIR LABEL

OIL HEAT—AS BENEVOLENT AS SUNSHINE



Don't wait for winter —install oil heating *NOW!*

IF you expect to install oil heating *some time* why not act *now* and enjoy it this winter?

Oil heat not only frees you from the coal shovel and ashes—it gives you clean, wholesome, automatic heat, uniform in zero weather and during the trying days of spring and autumn when it is very difficult to regulate a furnace fire. Your house is refueled as easily as your automobile and you have an extra room in your basement.

The oil heating dealer in your community will gladly inspect your present heating plant, or your building plans, and give you estimates on an efficient, economical oil heating system.

For your guidance the Oil Heating Institute has published a series of non-technical books on the subject. The coupon will bring the one you want.

This is the Emblem of the
Oil Heating Institute

It is the symbol of satisfactory public service in oil heating.

Only the manufacturers who are members of the Oil Heating Institute are permitted to use it.

These manufacturers have earned their membership through the enthusiasm of thousands of home owners whom they have provided with efficient and dependable oil heat.

This emblem protects you, and it will be protected, on your behalf, by the Oil Heating Institute.

OIL HEATING INSTITUTE

Check the book you want

MAIL THE COUPON TODAY!

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Please send me, free of charge, the following information on oil heating equipment:

Does it Pay to Install an Oil Heater?.....
Are Oil Heaters Perfected?.....
What About the Supply of Oil Fuel?.....
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Name.....
Address.....
City..... State..... N 8

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12 Doz. $3.00
6 Doz. $2.00
9 Doz. $2.50
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Cash's Names

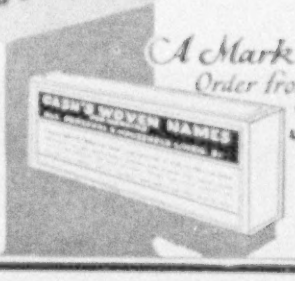
Woven on Fine Cambric Tape

JOSEPH LYONS

They save laundry losses at home, school, traveling.

A Mark of Individuality

Order from your Dealer or write!



J. & J. Cash, Inc.

528 A St., S. Norwalk, Conn.
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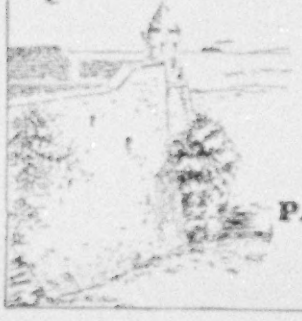
Scenic Cruises To CALIFORNIA *via "Spanish Americas"*



THROUGH the Panama Canal with 7 visits in Central America, including foreign capitals.

$350 up one way water
one way rail
$250 up one way water

Tours from your home town on main line points and back; first class meals and berth on steamer and first class railroad transportation. Stopovers at Apache Trail, Grand Canyon, Yellowstone Park, Yosemite, etc. Slight additional cost returning via Canadian Rockies.

(Booklet N on request.)

PANAMA MAIL S. S. CO.

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TRAVELER, TEACHER, STUDENT, EXPORTER, TOURIST

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This map, pronounced by experts the most complete yet issued, gives all places of 5,000 inhabitants or more, railroads, national parks, steamboat routes, connecting highways and mountains—information of real value to motorists and tourists, who find this map a helpful supplement to their standard road maps. The paper edition folds readily to fit into automobile door pockets. Insets show 16 large cities. 36 x 27 inches. 5 colors.

North America

(Including large scale map of Canada and the Arctic)
38 x 28 inches. 6 colors

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(Showing new boundaries; separate index shows old and new place names. This index is 50 cents extra)
30 x 33 inches. 4 colors

South America

35 x 25 inches. 6 colors

The Caribbean

42 x 23½ inches. 5 colors

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(Obtainable only in linen)
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36 x 28 inches. 6 colors

Paper, $1 each; linen, $1.50. Postpaid in U. S. A. Mailing Abroad, 25 cents

And 5 other countries. Descriptive price list will be sent on request

NATIONAL GEOGRAPHIC SOCIETY
WASHINGTON, D. C.

ON THE HILLTOP AT DAWN

A summer sun is creeping up over the horizon. The fresh dew sparkles like countless jewels. The sun-drenched mist of the valley carries the fragrance of a thousand flowers, just awakening . . . The magic of it is in the freshness of it all!

And that is the secret of G. Washington Coffee—It's freshness. Each cup is freshly made simply by adding a spoonful of G. Washington—the refined quality of the most luxurious coffee ever blended—to a cup of hot water . . . It dissolves in one instant—you drink it the next.

It's so simple, so convenient—and its better, fresher flavor commends it to the modern housekeeper regardless of the number of her servants or the size of her household.

Another important feature of this fine coffee is its real economy—a small tin of G. Washington Coffee will make ten times as many cups as a can of ordinary coffee of equal size—and there is no pot to clean and no grounds to discard.

Send for a FREE trial package. G. Washington Refining Co., 45 Hanover St., Morris Plains, N. J.

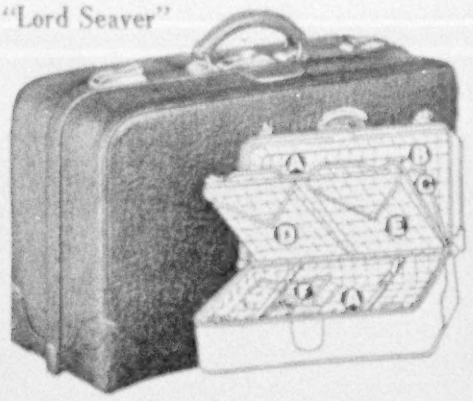
G Washington's
INSTANT COFFEE

SW

America's Smartest Gladstone

FIVE Bags combined in one!—At practically the price of one! A Gladstone Bag, Suit Case, Traveling Bag, Brief Case, Shoe Bag. 2 Colors: Handsome Black, Rich Brown.

"Lord Seaver"



(A) & (A) *Two spacious compartments! for clothes; for furnishings; for clean clothes; for soiled clothes!*

(B) *Center partition separating (A) and (A). Keeps contents of each compartment neat, tidy and orderly!*

(C) *Shirt Pocket with extra wide bellows to accommodate MORE Shirts!*

(D) *Pocket for Toilet Accessories.*

(E) *Brief Case Pocket for manuscripts, stationery, reports, layouts, wallet, flask, catalogues, pens, pencils, etc. May be used for ties, collars, handkerchiefs, socks.*

(F) *Shoe Bag with drawstrings. Folds compactly. Keeps shoes from soiling clothes. You simply MUST see "LORD SEAVER" to appreciate it. "A place for everything—everything in its place!" Pack and unpack in half the time!*

Sold Direct! 10-Day Trial FREE

LORD SEAVER is the aristocrat of Gladstone Bags. Genuine Cowhide, richly grained, 24" size; welted soft sides; pressed steel frame that makes Gladstone astonishingly LIGHT. English tailored lines with that indefinable air of "class." You never saw such a handsome, roomy, light-weight, practical Gladstone Bag. Compare it with a $50.00 Bag. Enormous orders for leather, coupled with our Economical "Direct-by-Mail" method, make possible the low price of **$29.35**

Our Plan is Different!

It is arousing nation-wide comment. We ask for NO Money in Advance! NOTHING on Delivery! We send "Lord Seaver" for 10 Days' Trial ABSOLUTELY FREE!

If pleased, you may pay on Budget Plan:

$6.00 MONTHLY

Or, if you prefer to pay Cash at the end of the 10 Days' Trial, deduct $2.40 and send Check or Money Order for $26.95. ORDER NOW! **$26.95**

SEAVER-WILLIAMS, 365 Washington St., Boston, Mass.
Importers, Exporters, International Mail Order House

GENTLEMEN:—Send me "Lord Seaver" Gladstone for 10 days' FREE TRIAL on "NO Money in Advance—NO Money on Delivery" Plan. Color .....

Name .....

Address .....

Tear out—mail adv. NOW! If a new customer, please tell something about yourself. We will appreciate and respect the information. THANK YOU! Nat. Geo. 8-28

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fourth annual
MEDITERRANEAN CRUISE

SAILING from New York Feb. 14, 1929, on the specially chartered White Star Line S.S. Calgaric. $740 to $1675—all inclusive. First class only—stop-over privileges. 68 days—23 ports—20 countries, including North Africa, Venice, 5 Balkan ports, 4 principal islands, 2 weeks in Holy Land and Egypt.

Inquire of your own agent or
James Boring's Travel Service, Inc.
Dept. M-38
730 Fifth Ave. at 57th St.
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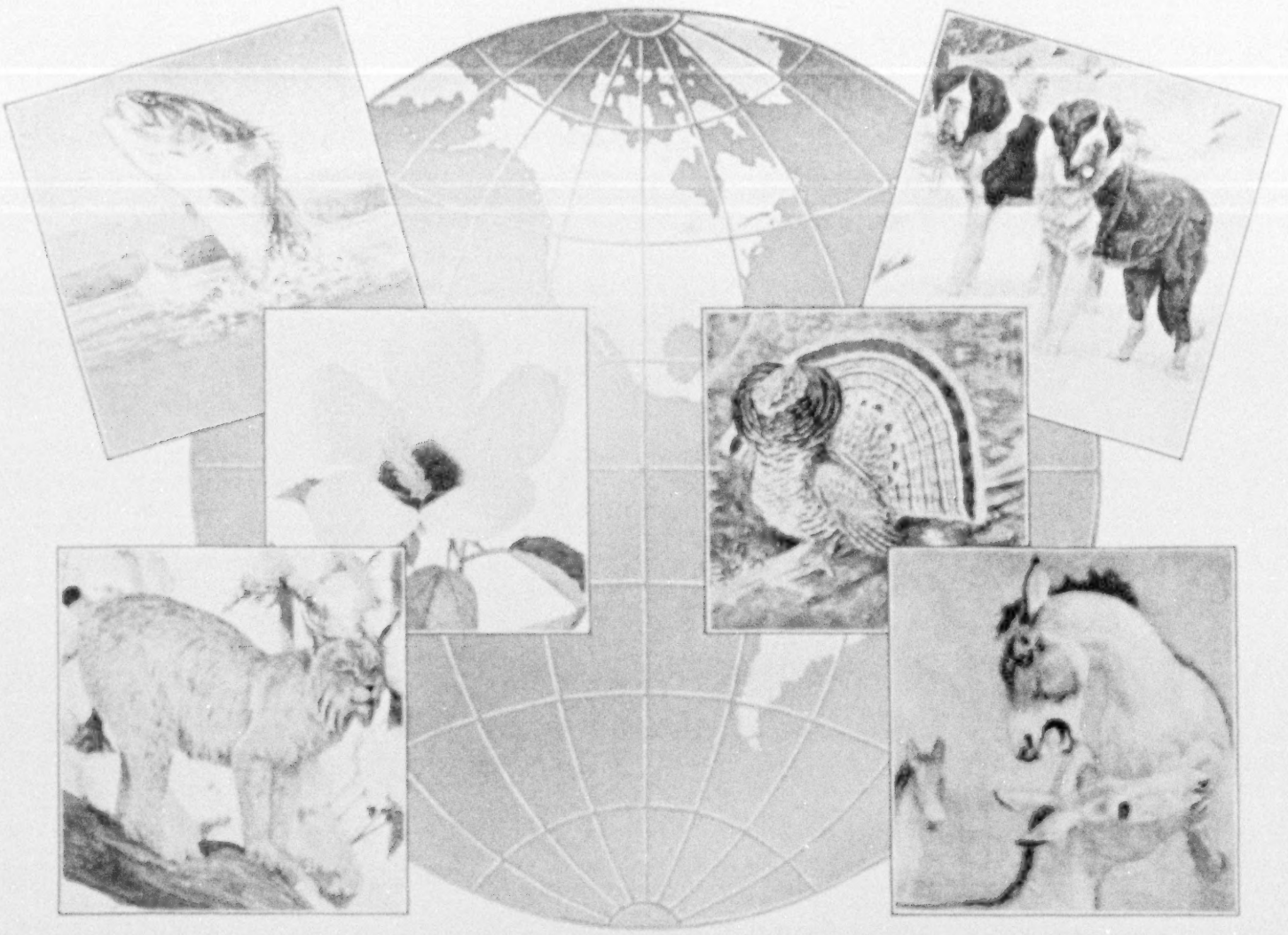

A WORLD of NATURE KNOWLEDGE

To Enrich Every Vacation Moment

The Book of Birds (*Revised Edition, 1927*)—by Henry W. Henshaw; full-color portraits of 331 birds; 12 bird migration maps; 230 pages; Molloy art binding, $4.

The Book of Wild Flowers—by William Joseph Showalter and other authorities; 250 full-color paintings of wild flowers and grasses; 243 pages; Molloy art binding, $4.

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The Book of Fishes—by John Oliver La Gorce and other authorities; under-water action portraits in full-color of 92 fishes; 243 pages; Molloy art binding, $4.

Horses of the World—by Major General William Harding Carter; 24 full-page illustrations in color; 72 black-and-white engravings; 118 pages; bound in buckram, $3.

The Book of Dogs (*1927 Edition*)—A veritable "Bench Show" by leading authorities; full-color portraits of 102 dogs; other engravings; 110 pages; Molloy art binding, $3.

Prices postpaid in U. S. and Canada. Mailing abroad, 25 cents. Obtainable only from the

NATIONAL GEOGRAPHIC SOCIETY WASHINGTON, D. C.

NATIONAL GEOGRAPHIC SOCIETY, Washington, D. C.

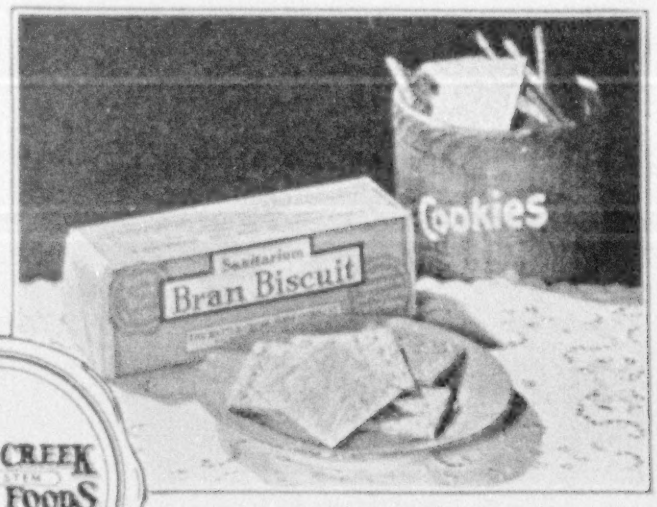
I enclose $_____ for _____ copies "Birds"; _____ copies "Flowers"; _____ copies "Wild Animals"; _____ copies "Fishes"; _____ copies "Horses"; _____ copies "Dogs."

Name_____

Address_____

8-28 Descriptive illustrated booklet on request.

Little Folks Thrive on These Tasty Biscuits



Bran Biscuit is a natural corrective with a pleasing flavor

BRAN BISCUIT is a natural corrective food with a pleasing flavor. It puts a keen edge on the appetite, and supplies blood-building iron, lime for teeth and bones and growth-stimulating vitamins.

Just notice how your children take to crisp, sweet Bran Biscuits when you have them in the cookie jar! Encourage them. They help build strong, sturdy bodies. And they are an aid to regular habits. A 25-cent package will fill the cookie jar and afford something wholesome and worthwhile for the children to nibble on, for days.

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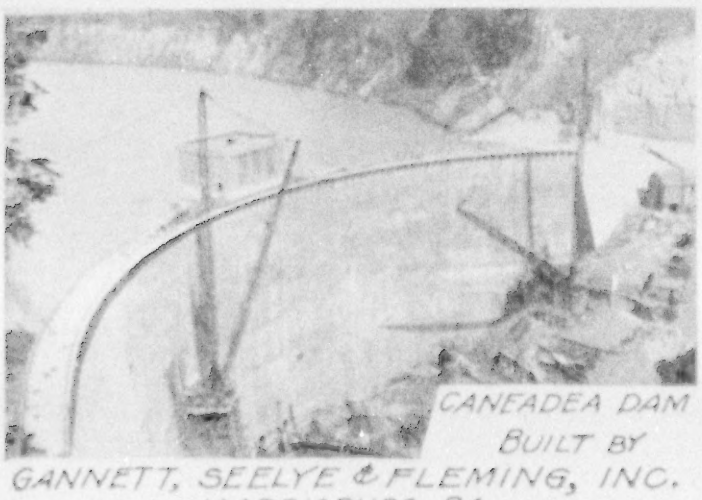

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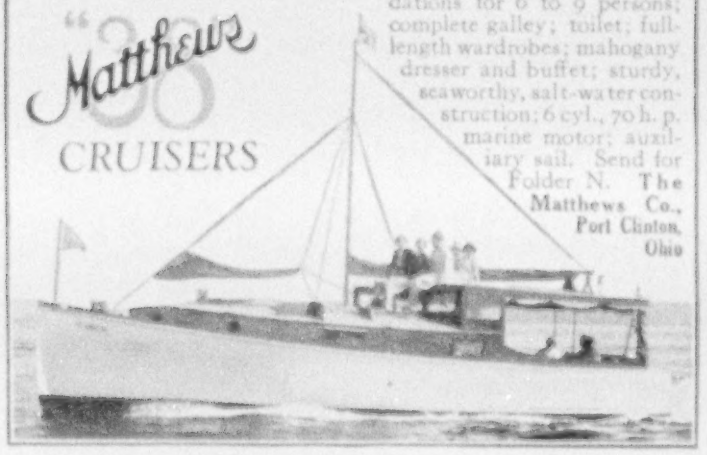

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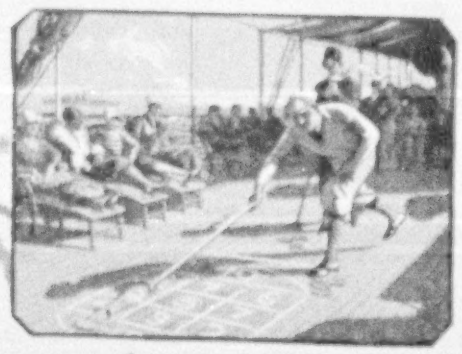

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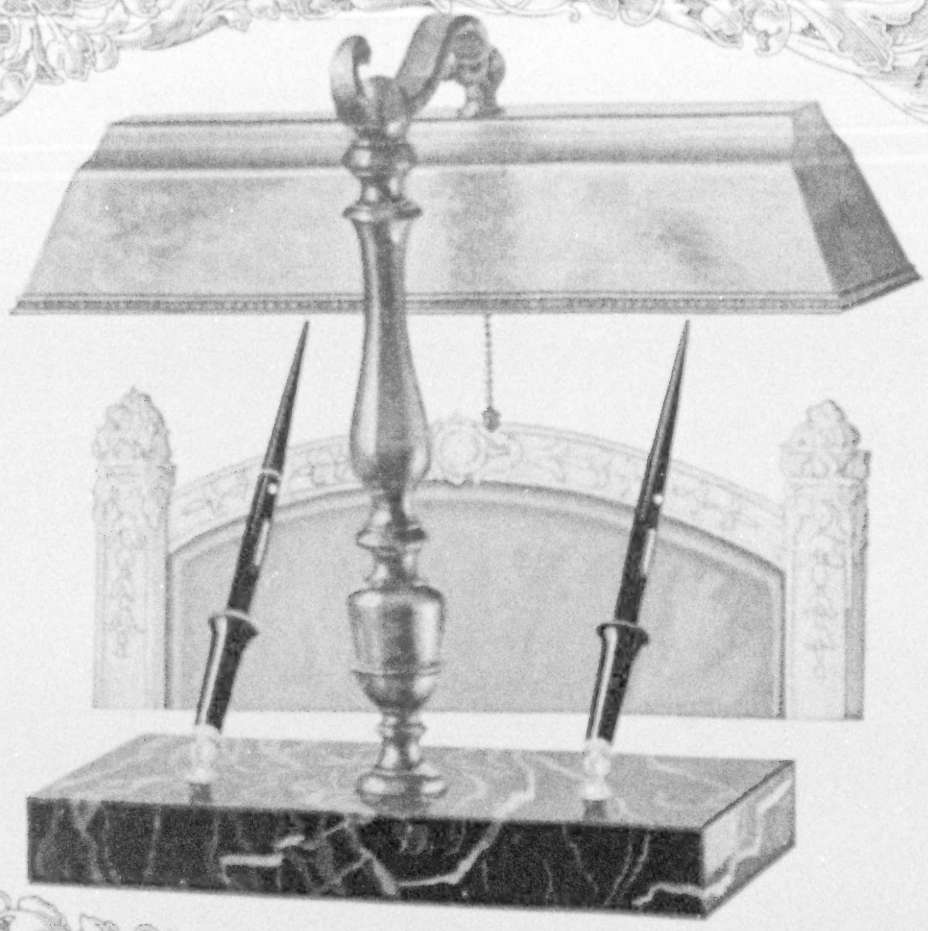

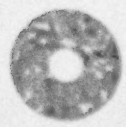

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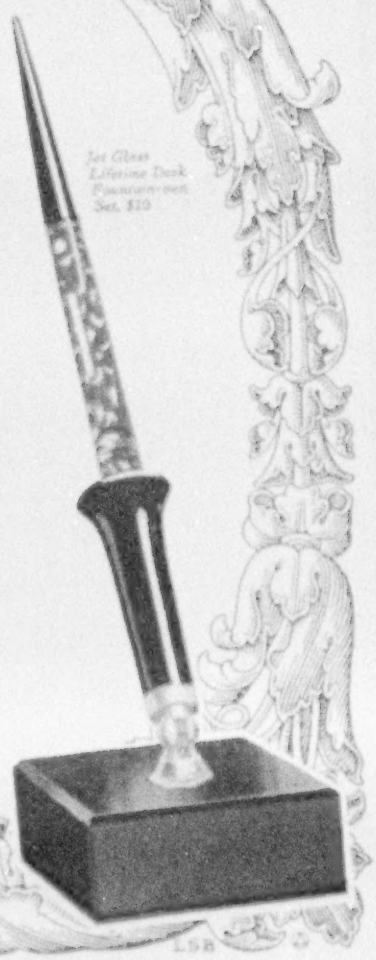

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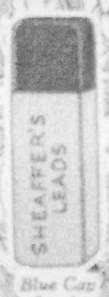

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